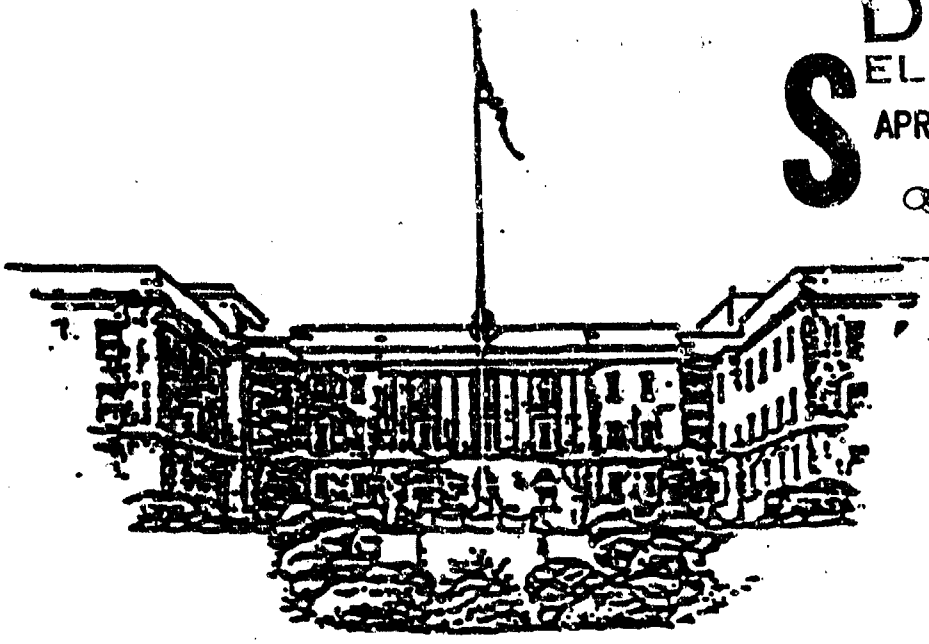
NEW MANNING SYSTEM FIELD EVALUATION

Technical Report No. 3



DEPARTMENT OF MILITARY PSYCHIATRY
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This is the third WRAIR quarterly report concerning research activities in support of the HQDA New Manning System (NMS) Field Evaluation. It covers WRAIR research activities during the period of 16 January through 15 April 1986. This report provides general information and a survey status report for the "Soldier Will" survey; "Soldier Will" survey data with a focus on social climate; Family issues from the study of the human dimensions of the 7th Light Infantry Division; and a summary of the WRAIR Research oversight pannel discussion with LTC Robert M. Elton.

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NEW MANNING SYSTEM FIELD EVALUATION

Technical Report No. 3

15 June 1986

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TABLE OF CONTENTS

Note: Some of the tables for Appendix A, are not included in the "Action Officer" version of this report.

EXECUTIVE SUMMARY

This is the third of 12 quarterly reports describing the programs and findings from participation by the Walter Reed Army Institute of Research (WRAIR) in the Headquarters, Department of the Army (HQDA) New Manning System (NMS) Field Evaluation. This report contains a detailed OVERVIEW of current research activities as well as associated research findings. It also includes APPENDICES that contain specific information about various aspects of WRAIR's NMS Human Dimensions Evaluation.

The following is a brief summary of the most important issues raised in this technical report.

1. Results from the analysis of the entire first wave of data (collected between May and December 1985) show COHORT soldiers and units faring better on "soldier will" measures than nonCOHORT. For example, COHORT soldiers showed higher vertical and horizontal cohesion than did nonCOHORT soldiers. Meaningful interpretation of these differences must await the collection and analysis of succeeding waves of survey and interview data.

2. Information from WRAIR's NMS family research suggests that formal Family Support Groups (FSGs) do not replace the need for strong informal relationships among unit families. The critical role of the FSG is to respond to unit based issues (e.g., welcoming and orienting new unit family members, preparing and helping unit-family members to cope with lengthy husband-father absences, preparing unit-family members for OCONUS rotations). The critical role of informal small-unit relationships is to provide the soldier and his family with social support at times of individual crisis (e.g., birth of a child, injury or death to a family member etc). Participation in FSGs should be encouraged (as a way of building informal relationships) but individuals should not be pressured to participate in these organizations.

3. WRAIR has established a human dimension research oversight panel chaired by LTG (RET) Walter F. Ulmer, USA. This group of distinguished military officers, noncommissioned officers, and civilian scholars has reviewed WRAIR's initial research efforts. Among their many comments, the panel emphasized that the value of military cohesion for effective combat operations rests on historical experience, and need not be correlated with measures of garrison or training performance in order to command the continued attention of Army leaders. The panel accepted as fact that military cohesion is an important inhibitor of psychological breakdown in battle. They emphasized the importance of this relationship above and beyond the scientific community's ability to demonstrate statistical relationships between cohesion and unit training performance.

OVERVIEW

1. Background

a. This is the third WRAIR quarterly report concerning research activities in support of the HQDA (ODCSPER-DAPE-PSB) New Manning System (NMS) Field Evaluation. It covers WRAIR research activities during the period 16 January through 15 April 1986.

b. This report is designed (1) to provide HQDA (and other participating agencies) with an update of WRAIR's current NMS research activities; (2) to raise issues that warrant discussion among the agencies involved in the overall evaluation; and (3) to forecast some of WRAIR's future NMS research activities.

2. Current Activities

A. Soldier Survey (Appendix A)

(1) The first iteration of the "Soldier Will" data collection has been completed and considerable data anaylsis has been accomplished. The second iteration questionnaire has also been administered and data preparation is underway. The initial analysis of the second wave of data should be completed by the end of the First Quarter of FY87. The third iteration of the questionnaire will be administered between May and November 1986.

(2) The overall response rate for the first iteration was 78.3%. The response rate for the second iteration was 71.0%. Both of these response rates are the ratio of soldiers in the unit who took the survey to the number of soldiers assigned to the unit. These response rates do not reflect the fact that there were units originally selected to participate in this study, which for a variety of reasons never received one (or both) of the questionnaire iterations. This loss of units reduces our ability to generalize some of our findings.

(3) Based on the current analysis of the full first iteration data, the following findings and future issues are of note:

(a) <u>"Soldier will" can be measured.</u> Results showed that "soldier will" can be reliably measured as:

-Company Combat Confidence
-Senior Command Confidence
-Small-Unit Command Confidence

-Concerned Leadership
-Sense of Pride
-Unit Social Climate
-Unit Teamwork

Seven attitudinal scales, corresponding to these concepts, were developed. These scales showed good measurement qualities, i.e., internally consistent and generally unidimensional. It is important to emphasize that measurement issues including additional scale refinements, will continue to be critical aspects of WRAIR's NMS research efforts.

(b) "Soldier will" tells us something important. Soldiers who reported greater "soldier will" in their units also reported better life adjustment. These soldiers had greater life and Army satisfaction, experienced greater personal well-being, less personal distress, less worry and nervousness that interfered with work and required medication, and expressed more willingness to stay in their unit, to stay in the Army, and to re-enlist than those soldiers who scored lower on "soldier will." Soldiers who reported higher "soldier will" also had fewer number of AWOLs, number of days AWOL, and nonjudicial punishments. "Soldier will" scales also differentiated soldiers by unit structure (line vs. headquarters), and by unit type (armor, infantry, field artillery).

(c) COHORT soldiers and units fared better on "soldier will" than did nonCOHORT. COHORT soldiers consistently scored higher on "soldier will" than did nonCOHORT soldiers. These differences were the same even when personal, unit and community characteristics were considered (like age, rank, education, marital status, type of combat arms unit, living arrangements, OCONUS/CONUS deployment). In addition, COHORT companies had greater "soldier will" than did nonCOHORT companies (when data were aggregated by company). When COHORT units were broken down into four more refined categories (i.e., Airborne COHORT, Light Infantry COHORT, commonly trained OSUT COHORT, and COHORT units in which personnel were only stabilized), greatest differences were between the more general categories of COHORT and nonCOHORT. These differences did not substantially change when line and headquarters companies were treated separately.

(d) COHORT soldiers showed higher vertical and horizontal cohesion than did nonCOHORT soldiers. Two scales were developed to measure vertical and horizontal cohesion. COHORT soldiers reported both greater vertical and horizontal cohesion than did nonCOHORT soldiers. Soldiers in both COHORT and nonCOHORT units who reported greater vertical cohesion also said that the combat readiness of their fellow soldiers and their company was greater. Horizontal cohesion was only related to soldiers' assessments of the combat readiness of their fellow soldiers.

(e) What Do Results Mean? Differences in "soldier will" were found between COHORT and nonCOHORT soldiers and companies. Differences in "soldier will" are not explained by systematic differences in personal characteristics

(like age, race, education etc) between COHORT and nonCOHORT soldiers, as these characteristics were considered in analyses. Both types of COHORT units, commonly trained OSUT and personnel stabilized, were very similar in "soldier will," and both had greater "soldier will" than that found in nonCOHORT units. When comparisons were made between comparable combat arms units across the two COHORT categories, commonly trained OSUT soldiers did, in fact, have higher "soldier will" than did COHORT soldiers who were merely stabilized. Personnel stabilized COHORT soldiers still had greater "soldier will" than nonCOHORT soldiers, despite the fact that the mean number of months in the unit was less for these COHORT soldiers than for nonCOHORT soldiers.

Several alternative hypotheses may explain why personnel stabilized COHORT soldiers have greater "soldier will" than nonCOHORT soldiers: (1) Personnel stabilized COHORT soldiers may expect that they will stay together a longer period of time than nonCOHORT soldiers, increasing their commitment to and involvement with their fellow soldiers and leaders; (2) As a member of a labeled COHORT unit, soldiers may receive greater attention and encouragement to display cohesiveness; (3) Personnel stabilized COHORT units may have been comprised of soldiers with more positive attitudes and higher morale characteristic of soldiers just completing OSUT; (4) Soldiers in personnel stabilized COHORT units may present themselves as more cohesive because it is expected of COHORT soldiers; and (5) Personnel stabilized COHORT units represent just two battalions that may have had better than average "command climates." These hypotheses will be tested as additional survey, interview, and observational data are collected and analyzed.

B. "Soldier Will" Survey Data with a Focus on Social Climate (Appendix B).

(1) Background. WRAIR has begun a series of brief and straightforward data analyses with the intent of focusing intensively on selected questions of interest. In interpreting results from these analyses, we maintain that their military importance lies less with any single test of statistical significance and rather with predictable and repeatable patterns within the data.

(2) Comparing "soldier will" scales. Since the seven "soldier will" scales are constructed with different numbers of survey items, it is necessary to convert them to a common metric before making comparisons. We select a 0-100 scale here, with 50 as the neutral breaking point between mean positive and mean negative assessments of "soldier will" on any particular scale.

(a) Overall results show that "soldier will" scale means cluster around the neutral line, being neither very high nor very low. However, confidence in leadership, whether at the company or senior command level, averages out on the positive side. The perception that leaders are interested in what soldiers think and feel produces a net negative score. Concerned Leadership, our factor analytic approximation of vertical integration, in fact has the lowest relative mean score of the seven scales (43.2), followed by Unit Social Climate (47.1).

(b) By limiting the analysis to the junior enlisted ranks, the means for Company Command Confidence, Senior Command Confidence, Sense of Pride, and Unit Teamwork are lowered, but only Unit Teamwork falls below the neutral line. For E1-E4s in line companies, COHORT soldiers have higher means than nonCOHORT soldiers on all seven scales, with the greatest differences found with Unit Teamwork, Unit Social Climate, Small-Unit Command Confidence, and Concerned Leadership. COHORT soldiers score beneath the neutral line on two of seven scales, compared to five of seven for nonCOHORT soldiers. On Concerned Leadership for nonCOHORT soldiers, the mean score is closer to a low average than a moderate or neutral average.

(3) Focus on a single "soldier will" scale. Unit Social Climate (USC) is selected for further analysis because of its intuitive appeal via the COHORT versus nonCOHORT classification. Specifically, it includes survey items directly addressing trust, closeness, social support, and scope of interaction within the company, platoon, and squad. These are items normally associated with horizontal group cohesion.

(a) Only E1s report net positive levels of cohesion on Unit Social Climate, with a significant drop occurring with E2s and again with E4s. The same pattern is noted for both COHORT and nonCOHORT soldiers, although COHORT soldiers have higher starting points. Currently, we are not sure what everyday life experiences in the progression in rank from E2 to E4 contribute to a perceived loss of cohesion.

(b) OCONUS assignment has a small but significant negative impact on reported cohesion levels. The attenuation of CONUS social ties, the difficulty of establishing oneself socially in a foreign country, and the exposure of the soldier to a new Army "world" may account for this impact.

(c) Smaller work group size, such as in armored units, allows for more intensive social interaction, and therefore for higher levels of reported cohesion. HQ and combat service support companies display lower USC means than line and combat support companies, possibly because the leadership and task structure of the latter may be clear-cut or delimited. Light infantry and airborne units respond with relatively higher levels of USC, it is hypothesized, because of their specialized or "elite" status with the Army. Such labeling, to the degree it is internalized, provides an additional source of group identity.

(d) As observed earlier, COHORT soldiers reveal higher levels of horizontal bonding than nonCOHORT soldiers. COHORT identity itself, and the expectations surrounding it, seem to consistently translate to higher (less negative) levels of perceived cohesion as measured by USC. However, common OSUT-trained soldiers, and not just COHORT soldiers who are stabilized, have highest USC. (Note: all conclusions regarding personnel in COHORT stabilized battalions must be regarded with caution since only two such battalions are in the first wave data base). Further analysis, concentrating on soldiers' perceptions of common training and personnel stability levels, as well as

utilizing both baseline and longitudinal data, must be carried out before any trends can be accepted as conclusive.

(e) By limiting the Unit Social Climate analysis to line companies only, no new findings were discovered, except that for armored units the scale mean now registered positive (over the neutral line). The remaining findings, however, refer to E1-E4s in line companies only.

(f) If we array battalions with respect to USC means while identifying battalion type, COHORT vs. nonCOHORT, and CONUS vs. OCONUS statuses simultaneously, we find that these individual effects are largely additive. Thus, if we know a unit's type and its COHORT status and its location, we can more correctly predict the unit's level of perceived cohesion than if we only know one or two of these unit qualities. In this first wave of data the greatest difference on USC was found between armor-COHORT-CONUS soldiers (well above the neutral line) and field artillery-nonCOHORT-CONUS soldiers (well below the neutral line). (There were no field artillery-nonCOHORT-OCONUS respondents in the current data base).

(4) Relating findings back to the survey questions. The analytical exercise is brought to a close by examining how soldiers in the two extreme groups noted above answered two of the USC component questionnaire items. On "People in this company feel very close to each other," 44% of armored-COHORT-CONUS soldiers agreed or strongly agreed compared to just 12% of field artillery-nonCOHORT-CONUS soldiers. Similarly, when asked to rate from very low to very high their "unit's togetherness or how 'tight' members of [their] unit are," 53% of armored-COHORT-CONUS soldiers said high or very high versus 20% of field artillery-nonCOHORT-CONUS soldiers. Nevertheless, on both questions for both groups there was a tendency to avoid the extreme categories and to choose the middle ones.

(5) The structure of this exercise and the corresponding graphs in Appendix B will serve as a prototype for future analyses, both of the baseline and longitudinal data.

C. Spouse Survey

(1) First iteration data collection has been completed (June 86) and data analysis has been started. Second iteration data will be collected in October and November (1986). At that time OCONUS nonCOHORT and the rotating OCONUS (to CONUS) COHORT spouses will be added to the NMS spouse study sample.

(2) WRAIR expects to publish initial information from the first iteration spouse survey data in the next quarterly report.

(3) Analysis of data from an earlier COHORT spouse study is continuing. An article on the relationship of military life stress and marital stress with psychological well-being (across an extended period of a COHORT unit's lifecycle) is being prepared and will be released under a separate cover.

D. Battalion Rotation

(1) During this reporting period a team of WRAIR researchers has been collecting interview data in all the CONUS rotating battalions (and their nonCOHORT comparison units). At the same time, a WRAIR staff member has been conducting a more limited interview survey of groups of OCONUS wives with husbands assigned to the battalions rotating from USAREUR to CONUS.

(2) Similar interview data will also be collected after the summer rotations in both OCONUS and USAREUR.

(3) WRAIR's first technical report in FY87 will be devoted to issues associated with Battalion Rotation. This will include information concerning both unit (soldier) and family issues.

E. Unit Interviews

(1) The next series of unit interviews will take place during July and August 1986 as part of WRAIR's participation in the HQDA Battalion Rotation Assessment Visits (currently being coordinated by HQDA). These interviews will include a sampling of cadre and soldiers from all of the rotating battalions, and they will focus on rotation issues.

(2) Beginning in October 1986 WRAIR scientists will begin another series of limited soldier-cadre interviews with all the COHORT and nonCOHORT battalions participating in the NMS evaluation. These interviews are designed to enhance our understanding of the longitudinal effects of the COHORT experience as well as any impact of the battalion rotation experience.

F. 7th Infantry Division (Light)

(1) Data collection and analysis of the development of the 7th ID(L) continues. In addition, planning is underway for an assessment of unit reconstitution as part of the division certification exercise that will be conducted this summer.

(2) Considerable information has already been collected concerning family issues related to the development and operation of the ID(L) (Appendix C). In Summary:

(a) .Through the first year in the life cycle of COHORT combat arms units, many enlisted families continue to experience adjustment problems. Heavy field training demands and unpredictable garrison duty hours impact adversely on family life and conjugal cohesion. Newly established households often experience severe financial strain and high rates of residential mobility during the first year at Ft. Ord. In each battalion a cluster of family members arrives with the cadre, followed by a similar surge of families arriving with their first-term COHORT husbands. However, many family members 'trickle in' during the following twelve months. About half the first-term spouses are newlyweds. As wives and young children of COHORT soldiers add to

the members of COHORT unit family members during the first year, marital separations subtract members.

(b) Well-organized unit communications to most family members by company and battalion Family Support Groups (FSG) and various pre-deployment briefings assist in providing essential information for family well-being. Unit leaders' wives are active in Family Support Groups and bond quite closely across ranks. However, enlisted spouse participation in Family Support Group efforts is minimal. Rumor control is an important systems need. Many first-term wives experience periods of intense psycho-social isolation. Some lack useful social coping skills. Few have close social bonds with spouses from their husband's unit. The key sources of inter-family social support tend to be through informally developed friendships based on neighborhood, child-care, women's work, and other non-military affiliations.

(c) Spousal participation in Family Support Groups is limited by socio-psychological factors such as husband and wife avoidance of inter-rank 'fraternization', status and class differences between households, and the lack of shared awareness among unit spouses on modes of family adaptation and individual adjustment to the Light Infantry way of life. Major sources of family-unit information flow that help alleviate family stress are welcoming activities, family briefings, FSG telephone trees and FSG-unit family newsletters and flyers, as well as word-of-mouth communication.

(d) It is important to recognize that many of the issues and experiences cited here are not unique to the 7th ID(L) and Fort Ord. Rather, they are Army-wide concerns and experiences. It should also be noted that Fort Ord probably has one of the Army's most developed command-wide FSG efforts.

G. WRAIR "Research Oversight Panel"

(1) WRAIR has established a human dimension research oversight panel. This group met for the first time during the period 26-28 March 1986. The panel consists of distinguished military officers and civilian scholars. LTG Walter F. Ulmer, USA (RET), chairs the panel which consists of LTG Julius W. Becton, USA (RET), MG William S. Augerson, USA (RET), COL Michael Plummer, USA, SGM Thomas Ryan, USA (RET), CSM Walter Stock, USA (RET), Professor Charles Moskos, (Northwestern University), Professor David Segal, (University of Maryland), and Dr. T. Owen Jacobs (Army Research Institute).

(2) The purpose of the panel is to provide a continual impartial review of WRAIR's human dimensions research efforts, and to provide expert critique. Specifically, the tasks of the panel are: to review the NMS work to date, to question assumptions, to call attention to unexplored research possibilities, and to suggest policy implications to the HQDA DCSPER, LTG Robert Elton, who met with the panel during the last session.

(3) The panel offered the following observations and critique during its first meeting.

(a) The WRAIR evaluation plan is unbiased and is as likely to reveal negative aspects of the NMS as positive features.

(b) The evaluation plan has the potential of not only speaking to what does and does not work, but *how* and *why* as well.

(c) Measures of unit rather than aggregated individual performance would enhance the utility of the current "soldier will" survey, and efforts should be directed to using National Training Center data to this end. However, the panel members felt very strongly that the value of military cohesion for effective combat operations rests on historical experience, and need not be correlated with measures of garrison performance to command continuing attention at the highest levels of the Army. The panel accepted as fact that military cohesion is an important inhibitor of psychological breakdown in battle. They emphasized the importance of this relationship above and beyond the research community's ability to demonstrate relationships between cohesion and unit training performance.

(d) Sharp disagreement continues within the Army as to either the desirability or feasibility of greater family-unit involvement. The primary role of the WRAIR research effort may not be so much in reporting new data and insights, but rather in describing the variety of different sets of assumptions regarding unit-family relationships and making these assumptions explicit so that their consequences can be known.

(e) Sharp disagreement also continues within the Army as to whether success of either the NMS or the new light infantry divisions may be at the expense of the non-COHORT, conventionally organized Army. Personnel policies that either intentionally or unintentionally favor some units over others (or even create a perception of favoritism) are resented and will cloud any conclusions based on the evaluation. Again, a task for WRAIR may be to develop concepts and analyses which make assumptions and their consequences explicit rather than implicit.

3. WRAIR has no administrative or technical issues for inter-agency discussion at this time. Of note, WRAIR staff members have had extensive meetings with representatives of the Army Research Institute (ARI) concerning our future NMS research activities and we expect to continue the development of a collaborative relationship between WRAIR and ARI concerning the many important issues emerging from the NMS research.

4. Future Research Activities

In support of the HQDA DCSPER's interest in "war time" applications of COHORT principles, and in conjunction with WRAIR's combat psychiatry mission, this Department will participate in a HQDA sponsored evaluation of COHORT replacement during a combat training exercise. Planning for this evaluation is underway. The exercise is scheduled to take place this summer and will involve newly graduated OSUT trained COHORT soldiers used as replacements for a line unit engaged in a combat training exercise.

5. This overview was prepared by LTC James A. Martin, Ph.D., MSC, WRAIR POC for all NMS research. LTC Martin (and his alternate LTC Ingraham) can be contacted via commercial phone (301) 427-5210/5360 or Autovon 291-5261/5312.

Appendix A

The Measurement of "Soldier Will," Horizontal Cohesion, and Vertical Cohesion and Their Relationship to Training Performance and Unit Replacement System[1]

(Summary of Findings from the First Iteration Questionnaire Data)

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Summary of Results of First Iteration "Soldier Will" Survey Data

Research Objectives

The U.S. Army is attempting to increase combat readiness through a series of initiatives known as the New Manning System (NMS). The NMS involves changes in the structure, training, and deployment of combat units. These changes are expected to alter the soldier's will to fight and his ability to survive the stress of combat (collectively known as "soldier will"). The research objectives of this report of results obtained from the Soldier Will Survey were: (1) to develop measures of "soldier will;" and (2) to compare COHORT and nonCOHORT soldiers on these measures.

Sample Description

The sample was comprised of 93 companies (N = 8,869), 57 COHORT companies (N = 5,848) and 36 nonCOHORT companies (N = 3,021). Of the 57 COHORT companies, 10 were headquarters companies and 45 were line companies. The remaining two COHORT companies were combat service support or combat support companies. Of the 36 nonCOHORT, 6 were headquarters companies. Types of combat arms units represented in the 77 line companies were airborne, light infantry, mechanized infantry, armored, and field artillery. 78.3% (8,931/11,395) of the soldiers in the 93 companies were surveyed.

Summary of Findings

"Soldier will" can be measured. Results showed that "soldier will" can be reliably measured as:

1. Company Combat Confidence
2. Senior Command Confidence
3. Small-Unit Command Confidence
4. Concerned Leadership
5. Sense of Pride
6. Unit Social Climate
7. Unit Teamwork

Seven attitudinal scales, corresponding to these concepts, were developed. The scales showed "good" measurement characteristics (i.e., internally consistent and generally unidimensional).

"Soldier will" tells us something important. Soldiers who reported greater "soldier will" in their units also reported better life adjustment. These soldiers also had greater life and Army satisfaction, experienced greater personal well-being, less personal distress, less worry and nervousness that interfered with work and required medication, and expressed more willingness to stay in their unit, stay in the Army, and re-enlist than those soldiers who scored lower on "soldier will." Soldiers who reported greater "soldier will" also had fewer number of AWOLs, number of days AWOL,

and nonjudicial punishments. Soldiers from more interactive intensive units, such as line companies and armor units, had higher "soldier will" than soldiers from less interactive intensive units, such as headquarters companies and other combat arms units.

COHORT soldiers and units fared better on "soldier will" than did nonCOHORT. COHORT soldiers scored higher on "soldier will" than did nonCOHORT soldiers. These differences were the same even when personal, unit, and community characteristics were considered (such as age, rank, education, marital status, type of combat arms unit, living arrangements, OCONUS/CONUS deployment). In addition, when data were aggregated by company, COHORT companies had higher "soldier will" than did nonCOHORT companies. When COHORT units were broken down into four, more refined categories (i.e., Airborne COHORT, Light Infantry COHORT, commonly-trained OSUT COHORT, and COHORT units in which only personnel were stabilized), greatest differences were between the more general categories of COHORT and nonCOHORT. These differences did not substantially change when line and headquarters companies were treated separately.

COHORT soldiers showed higher vertical and horizontal cohesion than did nonCOHORT soldiers. Two scales were developed to measure vertical and horizontal cohesion. COHORT soldiers reported both greater vertical and horizontal cohesion than did nonCOHORT soldiers. Soldiers in both COHORT and nonCOHORT units who reported greater vertical cohesion also said the combat readiness of their fellow soldiers and their company was greater. Horizontal cohesion was only related to soldiers' assessments of the combat readiness of their fellow soldiers.

What Do Results Mean?

Differences in "soldier will" were found between COHORT and nonCOHORT soldiers and companies. Differences in "soldier will" are not explained by systematic differences in personal characteristics between COHORT and nonCOHORT soldiers, as these characteristics were considered in analyses. Both types of COHORT units, commonly trained OSUT and personnel stabilized, were very similar in "soldier will," and both had greater "soldier will" than that found in nonCOHORT units. When comparisons were made between comparable combat arms units across the two COHORT categories, commonly OSUT trained soldiers did, in fact, have higher "soldier will" than did personnel stabilized COHORT soldiers. Personnel stabilized COHORT soldiers still had greater "soldier will" than nonCOHORT soldiers, despite the fact that mean number of months in the unit was less for these COHORT soldiers than for nonCOHORT soldiers.

Several tentative explanations are offered to explain why personnel stabilized COHORT soldiers have greater "soldier will" than nonCOHORT soldiers: (1) Personnel stabilized COHORT soldiers expect that they will stay together a longer period of time than nonCOHORT soldiers, increasing their

commitment to and involvement with their fellow soldiers and leaders; (2) As a member of a labeled COHORT unit, soldiers receive greater attention and encouragement to display cohesiveness; (3) Personnel stabilized COHORT units were comprised of more recent arrivals than nonCOHORT and these soldiers typically have more positive attitudes and higher morale; (4) Soldiers in personnel stabilized COHORT units present themselves as more cohesive because it is expected of COHORT soldiers; and (5) Personnel stabilized COHORT units were comprised of just two battalions that may have higher than average "command climate." These explanations are tentative, and factors that affect "soldier will" will become more clear when additional survey, interview, and observational data are collected and analyzed.

The Measurement of "Soldier Will," Horizontal Cohesion, and Vertical Cohesion, and Their Relationship to Training Performance and Unit Replacement System

The purpose of this chapter is twofold: (1) to describe the status of questionnaire administration, data processing, and analyses of first, second, and third iteration questionnaire data; and (2) to report major findings of the first iteration questionnaire data.

Update on Administrative Aspects of the Survey

Questionnaire Administration, Questionnaire Data Processing, and Analyses

Table 1 summarizes the first, second, and third iteration questionnaire administration dates for the units under study. The first two pages show the battalions under study, and the remaining three pages the independent companies (not organized within a COHORT or a comparison nonCOHORT battalion).

Of the nineteen battalions under study, two did not receive first iteration questionnaires because of scheduling problems or late receipt of questionnaires. Three battalions did not receive second iteration questionnaires, two because of scheduling problems and the other because a "new" unit was substituted for an "old" unit participating in the New Manning System Field Evaluation.

Of the 38 independent companies, 16 companies received the first iteration questionnaire so that data could be included in the first iteration questionnaire data base. Of the remaining 22 companies not included in the first iteration data base, seven companies never received first iteration questionnaires due to either scheduling problems, not having received questionnaires, or not having received USAREUR clearance. Data obtained from the remaining 15 companies were cleaned, keypunched, and verified. These data will be included in the first iteration data base when first and second iteration data are compared (early Fall 1986).

Looking at second iteration questionnaire administration dates, seven companies did not receive questionnaires because of either scheduling problems, problems with USAREUR clearance, or unit rotation. Four companies were disestablished before second iteration questionnaires could be administered.

Analyses of second iteration questionnaire data will begin in mid- to late-July 1986. In the meantime, questionnaires will be cleaned and keypunched. The resultant data base will be checked for invalid data entries.

Third iteration questionnaire administration dates have been established

and are reported in the far righthand column of Table 1. The third iteration questionnaire will be administered beginning in June 1986 and continuing through November 1986.

Response Rates

The overall response rate for the first iteration questionnaire administration (ratio of soldiers in the company who took the survey to number of soldiers assigned to the unit) was 78.3% (8,931/11,395). Table 2 reports response rates by unit status (COHORT and nonCOHORT) and rank category. Table 2 represents response rates for only 42 of the 93 companies in the first iteration data base; 51 companies did not report response rate by rank.

The overall response rate for units participating in the second iteration was 71% (8,072/11,373).

Third Iteration Questionnaire

The questionnaire to be used in the third iteration administration is being printed by Soldier Support Center and will be fielded sometime in May, 1986. Since there were relatively few problems in field-testing the second iteration questionnaire, this instrument served as the basis for the third iteration questionnaire with a few questions added relating to battalion identification, buddy relationships, and battalion rotation.

Report of Analyses from First Iteration Questionnaire Data

Table 3 summarizes the number of companies and soldiers represented in the first iteration questionnaire data used for the analyses. Units not included in this data base are described in Table 1 for reasons summarized above, in addition to reasons summarized in the second technical report (WRAIR's New Manning System Field Evaluation, Technical Report No. 2, "'Soldier Will:' Status Report," March, 1986). (Appendix I, Tables 1-5 summarize demographic characteristics of respondents.) Although significant differences in sociodemographic characteristics were found between COHORT and nonCOHORT soldiers, NCOs, and officers, most differences were attributable to the large sample size (yielding a very small error term in the denominator). The only substantive differences were between COHORT and nonCOHORT E4s and below: For example, there were proportionally more married soldiers and soldiers living off-post in nonCOHORT than in COHORT units.

Replication of Scale Construction

One analysis aim for the entire first iteration of questionnaire data was to define those social and psychological factors comprising a unit's combat readiness. Operationally, this was carried out by examining whether the scales that were constructed using data obtained from the first 27 companies (WRAIR's New Manning System Technical Report No. 1, Chapter 5, "The Measurement of 'Soldier Will,'" November, 1985) were evident in the larger data base.

Factor analytic procedures used here were identical to those outlined in the first technical report. Results from the larger data base were remarkably similar to those obtained from the initial 27 companies. (Appendix I, Tables 6-21 report results of reliability and factor analyses of the scales.) Again, "soldier will" was best represented by seven scales: "Company Combat Confidence," "Senior Command Confidence," "Small-Unit Command Confidence," "Concerned Leadership," "Sense of Pride," "Unit Social Climate," and "Unit Teamwork." The scales showed a high degree of internal consistency. Scales that represented one dimension or factor were: Senior Command Confidence, Sense of Pride, and Unit Teamwork. Scales that showed the presence of more than one factor were: Company Combat Confidence, Small-Unit Command Confidence, Concerned Leadership, and Unit Social Climate. Company Combat Confidence consisted of three factors: general combat confidence, confidence in weaponry, and confidence in oneself. Small-Unit Command confidence was represented by three factors in whom soldiers had confidence: squad/platoon leaders, officers, and crew members/self. Concerned Leadership consisted of two factors: concern for the soldier's welfare and personal contact with leaders. Unit Social Climate was comprised of three factors: trust and caring among soldiers, availability of instrumental support, and friendships among soldiers.

The "soldier will" scales identified above also showed a great degree of concurrent validity. They were related to reliable and valid measures of the soldier's general life and Army satisfaction. Soldiers who reported higher levels of "soldier will" also reported greater personal well-being, life and Army satisfaction, support for spouse, and greater psychological sense of community (see Appendix I, Table 22). In addition, soldiers who reported greater "soldier will" worked fewer hours per day, days per week, and weekends per month, had more time to take care of personal and family needs, reported seeing a doctor less often, and did not report nervousness and worry that interfered with work or required medication (see Appendix I, Table 23). Soldiers who wanted to stay in their unit, stay in the Army, and re-enlist also reported higher levels of "soldier will."

The "soldier will" scales were also significantly related to traditional measures of unit discipline. Soldiers who went AWOL, spent more days AWOL, or had more nonjudicial punishments, all reported lower levels of "soldier will" (see Appendix I, Table 24).

Differences in "Soldier Will" between COHORT and nonCOHORT Soldiers

Individual(soldier)-level comparisons. Comparisons were made between COHORT and nonCOHORT soldiers on "soldier will" scales as well as on other relevant scales, such as general well-being, life and Army satisfaction, spousal support, and sense of community. Separate comparisons were made for respondents in line and headquarters companies (Appendix I, Tables 25 and 26, respectively), and for only E4s and below (Appendix I, Tables 27 and 28,

respectively). Differences in "soldier will" between COHORT and nonCOHORT soldiers for headquarters companies paralleled those differences for line companies. The exceptions were on the Company Combat Confidence and Small-Unit Command Confidence Scales where differences between COHORT and nonCOHORT soldiers observed in line companies were smaller in headquarters companies. Limiting comparisons to E4s and below did not appreciably change the nature of previously noted differences between COHORT and nonCOHORT soldiers.

Mean comparisons on "soldier will" were made with more detailed operational definitions of unit status (COHORT vs. nonCOHORT). These included: (1) Airborne COHORT; (2) Light Infantry COHORT; (3) COHORT in which soldiers have common OSUT-training (yet not Airborne or Light Infantry); (4) COHORT units in which personnel are stabilized (but did not have common OSUT training); (5) nonCOHORT Airborne; and (6) all other nonCOHORT units (see Appendix I, column headings in Table 29). Two groups of units reliably and substantively differed when comparing the ordering of means on each of the "soldier will" scales. Units typically scoring highest across all "soldier will" measures were: Airborne COHORT, Light Infantry COHORT, commonly-trained OSUT COHORT, and COHORT units in which personnel were stabilized. Units typically scoring lowest across the scales were: nonCOHORT Airborne and all other nonCOHORT units. (For a more detailed analysis, see Appendix I, Table 30 in which pairwise comparisons on "soldier will" scales for the different combinations of COHORT categories are shown.) Variances on each "soldier will" scale were similar across the COHORT categories.

Hierarchical multiple regressions were performed to detect differences between COHORT and nonCOHORT units while holding personal, unit, and community characteristics, such as the soldier's age, race, education, marital status, type of unit, deployment to Europe, and living arrangements, constant (see Appendix I, Tables 31-32). Results showed that COHORT soldiers in line companies scored significantly higher than nonCOHORT soldiers on all "soldier will" scales and that COHORT status accounted for the greatest amount of variance on four of seven scales. On the remaining three scales (Small-Unit Command Confidence, Sense of Pride, and Unit Social Climate), COHORT status accounted for the greatest amount of variance in "soldier will" after rank or age. In headquarters companies, COHORT soldiers scored higher than nonCOHORT soldiers on six of seven "soldier will" scales. However, the proportion of variance accounted for by COHORT status (in predicting the "soldier will" scale score) was dramatically lower than that observed in the line companies. In fact, only on the Unit Teamwork scale did COHORT approach the amount of explained variance observed in line companies.

Unit-level comparisons. In previous analyses, measurements taken on individual soldiers were used to derive means for COHORT and nonCOHORT groups. In the next series of analyses, measurements taken on individual soldiers were aggregated by company, and then, means on the "soldier will" scales were derived. The mean of company means for COHORT and nonCOHORT units were compared.

Line companies were first ranked from highest to lowest on each of the seven "soldier will" scales. On all seven "soldier will" scales, unit status was significantly related to the arrangement of mean company scale scores. That is, on the whole, COHORT companies had higher mean scores than did nonCOHORT companies (see Appendix I, Tables 33-39). A similar result was found for headquarters companies. On four of seven "soldier will" scales (Small-Unit Command Confidence, Concerned Leadership, Unit Social Climate, and Unit Teamwork), unit status was significantly correlated with the rank-ordering of company means, with COHORT companies reporting higher scores on "soldier will" measures than nonCOHORT companies (see Appendix I, Tables 40-46).

Mean "soldier will" scale scores for different operational definitions of COHORT within line companies were compared. These definitions were again: (1) Airborne COHORT; (2) Light Infantry COHORT; (3) COHORT units in which soldiers had common OSUT-training; (4) COHORT units in which personnel are stabilized without having the benefit of common OSUT training; (5) nonCOHORT Airborne; and (6) all other nonCOHORT (see Appendix I, Table 47). As observed when data were run on the individual soldier level (see above), two groups reliably and substantively differed when comparisons of the ordering of means on each of the soldiers were made. Units typically scoring highest across all "soldier will" measures were: Airborne COHORT, Light Infantry COHORT, commonly-trained OSUT COHORT, and COHORT units in which personnel were stabilized. Units typically scoring lowest across the scales were: nonCOHORT Airborne and all other nonCOHORT units. (For a more detailed analysis, see Appendix I, Table 48 in which pairwise comparisons on "soldier will" scales for the different categories of COHORT are displayed.) Variances were substantively the same across the COHORT categories on each "soldier will" scale.

Soldier Perception of the Common Experience of Basic and Advanced Individual Training (AIT) and Unit Personnel Turnover

In our investigations, it was apparent that units differed greatly in terms of the way in which COHORT was operationalized in the field. Whereas some COHORT units were formed with soldiers who had been through Basic and AIT together, others had only their unit personnel stabilized. Some COHORT battalions were comprised of both types of COHORT units. To refine and validate the different operational definitions of COHORT vis-a-vis another standard, the relationships of both soldier perception of the number of soldiers in the company who had gone through Basic and AIT together, and the number of soldiers, NCOs, and officers who had newly joined the company to unit status, either COHORT or nonCOHORT, were examined.

Soldiers were asked two questions relating to their perception of how many soldiers in their company went through Basic and AIT together. These ratings were summed, and means were calculated for each company. Companies were then arrayed from highest to lowest on this variable. For both line and

headquarters companies, COHORT soldiers reported having gone through Basic and AIT with more members of their company than did nonCOHORT soldiers (see Appendix I, Table 49 and 50). However, when companies were arrayed by a score obtained from summing responses given to questions asking about personnel turnover, no relationship was found between unit type (COHORT vs. nonCOHORT) and perceived personnel turnover in line companies (see Appendix I, Table 51). In addition, contrary to expectation, COHORT headquarters companies had higher perceived personnel turnover than did nonCOHORT companies (see Appendix I, Table 52). A possible explanation of these seemingly contradictory results between the unit personnel turnover questions and the Basic and AIT questions is that a COHORT soldier, having just arrived as part of a new unit—in most cases, as part of an intact group assembled eight weeks previously—views himself and others as new personnel. In other words, despite having gone through Basic and AIT together, soldiers view themselves as new personnel. A confound of these results is the higher turnover among officers and NCOs than first-termers in COHORT units.

Relationship of Training Performance to "Soldier Will" and to Unit Status (COHORT vs. nonCOHORT)

Data on training performance were collected and reported to WRAIR by the TRADOC Combined Arms Testing Activity. (See WRAIR's New Manning System Field Evaluation, Technical Report No. 2, "'Soldier Will:' Status Report," March, 1986, for a description of this data base and the method of reporting results to WRAIR.) Relationships between the percent of company personnel passing in each marksmanship category (expert, sharpshooter, and marksman) and "soldier will" measures were examined for all units in the sample, in addition to examining these correlations for COHORT units and nonCOHORT units separately. When companies were pooled, no substantive trend was observed in relationships between "soldier will" and percent passing as experts, sharpshooters, and marksmen. However, when companies were separated into COHORT and nonCOHORT and correlations between "soldier will" and percent passing in each marksmanship category were calculated, a consistent pattern emerged.

In the expert category, correlations became more positive when going from the COHORT to nonCOHORT companies. In both the sharpshooter and marksman categories, an opposite trend was observed: Correlations became more negative when going from COHORT to nonCOHORT (see Appendix I, Tables 53-55). The same general pattern of results was found for headquarters companies, though the shift in relationships between "soldier will" and marksmanship going from COHORT to nonCOHORT units occurred only in the lowest performance category, i.e., marksman (see Appendix I, tables 56-58). This pattern of results was observed in the initial 27 companies and was reported in the second technical report.

These results suggest that the effects of COHORT are more beneficial for middle- to low-level performers rather than for high-level performers.

Sterling (1986) provided an interesting interpretation of these results. He explained that in highly cohesive units, soldiers do not want to be "different" (that is, deviate from the group norm) and labeled as an expert or "prima-donna." Rather, the stronger the morale and cohesion in a unit, the less desire the soldier has to deviate from the group status quo by qualifying as an expert. Likewise, the soldier does not want to stand out as a poor performer, shooting so poorly that the soldier fails to qualify. Hence, in units of higher cohesion, soldiers are more likely to achieve a respectable standard of performance, namely marksman.

Horizontal and Vertical Cohesion Measures (Chopper, Griffith, and Vaitkus)

A recurrent issue in the military psychology literature and at the meetings of the WRAIR Research Oversight Panel has been the comparative nature of relationships among soldiers (commonly called "horizontal bonding") versus relationships between soldiers and their platoon/company leaders (commonly called "vertical bonding"). These dimensions of cohesion were not readily apparent in the factor analyses of responses given to scale items. However, since these two concepts are recognized by military leaders and researchers as important in predicting a unit's combat readiness and combat performance, two measures tapping each concept were developed.

Scale items were chosen from the first iteration questionnaire instrument by two groups of Ph.D.-level researchers with experience in military psychology. Scale items were chosen to tap aspects of horizontal and vertical bonding or cohesion. The overlap between the items chosen was considerable, 88% overall (7 of 8 horizontal cohesion items were the same for both groups, and 15 of 17 vertical cohesion items were identically chosen.) (The terms, "peer cohesion" and "hierarchical cohesion," are used interchangeably in the tables for "horizontal cohesion" and "vertical cohesion," respectively.) Reliability and factor analyses were performed on items comprising each scale. Tables 4-5 report the results of the reliability analyses, and Tables 6-7 show results of the factor analyses. Both scales had high internal consistency (for horizontal and vertical cohesion scales, .83 and .88, respectively) and moderately high item-total correlations, ranging from .36 to .67 on the horizontal cohesion scale, and from .26 to .69 on the vertical cohesion scale.

Horizontal cohesion was comprised of two factors: caring among soldiers and provision of instrumental support. Although four factors emerged from the vertical cohesion scale, vertical cohesion probably is best represented by three factors: leader caring for the soldiers, NCO involvement with soldiers, and officer involvement with soldiers.

Soldiers who reported greater horizontal and vertical cohesion also reported greater "soldier will," psychological well-being, life and Army satisfaction, spouse support, and psychological sense of community (see Table 8).

Mean comparisons of horizontal and vertical cohesion were made between COHORT and nonCOHORT soldiers. In addition, the correlations between horizontal cohesion and vertical cohesion were calculated for COHORT and nonCOHORT soldiers. Three operational definitions of COHORT are represented in Table 9: (1) all line companies named COHORT; (2) all line companies that were COHORT CONUS; and (3) line companies that were COHORT in which soldiers had common OSUT training. The latter two operational definitions of COHORT were used because insufficient time had passed for the expected cohesion effects of COHORT to become apparent. (In fact, the mean number of months a soldier had spent in the unit was higher for nonCOHORT than for COHORT units in the sample.) The greatest effects of COHORT on cohesion would be expected in units that had the common experience of Basic and AIT. OCONUS COHORT companies were operationalized by unit stabilization, rather than by common OSUT training. Another way to ascertain the effects of COHORT on cohesion was to examine COHORT CONUS units vis-a-vis nonCOHORT units.

Tables 9, 10, and 11 display means and standard deviations of horizontal and vertical cohesion scales, and correlations between these scales for COHORT and nonCOHORT soldiers. Regardless of the operational definition of COHORT, COHORT soldiers reported higher levels of both horizontal and vertical cohesion. The relationship between the two measures did not differ substantially between COHORT and nonCOHORT units.

To ascertain relationships between horizontal cohesion, vertical cohesion, and combat readiness, scores obtained on horizontal and vertical cohesion were used to predict the soldiers' perception of combat readiness of their company and of their comrades (see Table 12). Regardless of unit status (COHORT vs. nonCOHORT), vertical cohesion was a significant predictor of both soldier perception of the combat readiness of the company and that of fellow soldiers: The greater the vertical cohesion, the greater the soldiers' perception of combat readiness of both the company and that of their fellows. Horizontal cohesion was a significant predictor of fellow soldiers' combat readiness in all units (both COHORT and nonCOHORT) but only a significant predictor of company combat readiness in COHORT CONUS units (which were largely comprised of soldiers who had gone through Basic and AIT together). In summary, the greater the vertical cohesion, the greater the soldier's perception that the company is combat-ready, and this relationship held regardless of unit status (COHORT or nonCOHORT). On the other hand, horizontal cohesion was only predictive of perceived combat readiness among fellow soldiers, except in COHORT CONUS units where it also predicted company combat readiness.

What Do Results of the First Iteration Questionnaire Data Mean?

"Soldier Will" Is Measureable

Reliable and valid measures of cohesion have been developed. Cohesion can be represented by seven scales: Company Combat Confidence, Senior Command

Confidence, Small-Unit Command Confidence, Concerned Leadership, Sense of Pride, Unit Social Climate, and Unit Teamwork. Although intercorrelated, these scales are viewed as tapping different conceptual aspects of the broader, more unified psychological construct called unit cohesion. In part, results supported this. On variables presumed to be outcomes of cohesion, "soldier will" scales accounted for different proportions of variance in these variables. In the second technical report, the combined contribution of "soldier will" scales in predicting unit status (COHORT vs. nonCOHORT) was demonstrated. Some "soldier will" scales were found to be more important (i.e., Company Combat Confidence, Sense of Pride, and Unit Teamwork) in predicting unit status than were others (i.e., Senior Command Confidence and Concerned Leadership).

"Soldier Will" Measures Cohesion

Whereas differences in "soldier will" were noted between COHORT and nonCOHORT units, differences were less apparent when analyses were limited to headquarters companies. This makes intuitive sense given the nature and extent of limited interaction between members of headquarters units compared to line companies. During recent interviews of company commanders, one company commander who had previously headed a line company emphasized the difficulty in simply assembling all his soldiers in his headquarters company to do physical training or the like. Soldiers in the same unit also expressed that relationships between soldiers were limited to sections within the headquarters company. These differences in interpersonal relations between line and headquarters companies were reflected on the "soldier will" scales, especially in multiple regressions. Noteworthy also is that soldiers from armor units had higher "soldier will" than soldiers from other types of combat arms units (see multiple regression analyses). This is not surprising given the nature of relationships in armor units: Tank crews are comprised of four men who eat, sleep, and fight in very close proximity, and as a result, typically display a high degree of bondedness. The fact that "soldier will" scales detect these differences in interpersonal relationships attests that these scales are useful measures of small-unit cohesion.

Explaining Differences in "Soldier Will" between COHORT and nonCOHORT Units

Differences in the developed measures of cohesion are noted between COHORT and nonCOHORT units. Yet, what do these differences represent? It is doubtful that differences in "soldier will" reflected differences in individual characteristics; multiple regression equations in which these characteristics were held constant showed COHORT soldiers had higher mean "soldier will" scale scores.

At present, only hypotheses can be given about the causes of some of the differences between COHORT and nonCOHORT units. Data gathered from interviews and observations (see WRAIR's New Manning System Field Evaluation, Technical

Report No. 1, November, 1985) have shown that long term differences on some "soldier will" dimensions result from the close bonding created by the intense and common experiences of OSUT training that continues throughout the unit's life cycle. COHORT soldiers in the sample reported having been in their units fewer number of months than did nonCOHORT soldiers (see Table 13, "Months in Unit"). Perhaps, the greater "soldier will" among COHORT soldiers is, in part, explained by their recent experiences in Basic Training. Nevertheless, we note that commonly-trained OSUT soldiers did not differ much from soldiers in COHORT units that only had their personnel stabilized (see mean "soldier will" scale scores in Table 13).

If we limit the comparisons between commonly-trained OSUT and personnel stabilized COHORT units, a different pattern of results emerged. To make more accurate comparisons, Table 14 limited both commonly-trained OSUT COHORT and personnel stabilized COHORT units to mechanized infantry and armor units. (Light Infantry, Field Artillery, and Airborne units included in Table 13 were excluded from both COHORT categories in Table 14.) Mean differences in "soldier will" between commonly-trained OSUT COHORT and personnel stabilized COHORT became larger (see Table 14). Here, commonly-trained OSUT soldiers did, in fact, have higher "soldier will" than did both personnel stabilized COHORT and nonCOHORT soldiers.

The common experiences of OSUT training may, therefore, bolster "soldier will" above that found in both personnel stabilized COHORT and nonCOHORT units. Personnel stabilized COHORT units also had higher "soldier will," though at the same time, soldiers reported less months in the unit and comparable turnover rates, than did nonCOHORT soldiers. At present, the labels of personnel stabilized COHORT and nonCOHORT units or other phenomena associated with these labels are apparently the only explanations for observed differences in "soldier will." With this in mind, several hypotheses are presented below:

(1) Behavioral and attitudinal expectancies influenced by the fact unit personnel are stabilized. Soldiers in these units might anticipate that unit members will be together for a long period of time, and perhaps, soldiers increase their commitment to, and involvement with, their fellow soldiers and leaders.

(2) Having been named a COHORT unit, unit members receive greater attention and encouragement to display the intended effects of the New Manning System, namely cohesiveness.

(3) COHORT units, having received "newer" personnel, show more positive attitudes and higher morale characteristic of units comprised of recent arrivals from training bases.

(4) COHORT soldiers present themselves as more cohesive because this is what is expected of soldiers in COHORT units.

(5) Personnel stabilized COHORT units were comprised of just two battalions. Based on field observations and unstructured interviews, these battalions appeared to have higher than average "command climate." This more positive command climate found in the personnel stabilized COHORT units may explain why these units scored higher than nonCOHORT soldiers in the sample.

These and potentially other hypotheses are tentatively offered to explain differences in "soldier will" between COHORT and nonCOHORT soldiers. Through collection of additional survey, interview, and observational data can those factors most responsible for these differences be identified.

Other Factors of Interest

Although attempts have been made to refine the operational definitions of COHORT to better untangle specific aspects of COHORT that give increased cohesion, groups within the COHORT category, and too, within the nonCOHORT category showed few differences in "soldier will." The most pronounced differences in "soldier will" were observed between the more general categories of COHORT and nonCOHORT. However, it is expected that the different operational definitions of COHORT (e.g., personnel stabilization vs. common BASIC and AIT training) will have differential effects on unit morale and cohesion. Hence, these definitions will be maintained, and further refined in an effort to more clearly understand the nature of the relationship between unit structure, training, deployment, and cohesion.

There has been an effort here to operationalize popular notions of what makes an effective and combat-ready organization, namely a unit that displays both horizontal and vertical cohesion. Vertical cohesion was more important in predicting soldier perception of the combat readiness of the company and fellow soldiers. Horizontal cohesion was significant in predicting the soldier's perception of his comrades' combat readiness. Horizontal cohesion was a significant predictor of company combat readiness in units in which we would have expected the COHORT "treatment" to be maximal, namely in COHORT units comprised of soldiers having had common OSUT training.

Unit Cohesion: Issues for Current and Future Research

Methodological Issues

Two issues related to measurement are: What is the appropriate level of measurement? And, what is the appropriate level of analysis? Currently, WRAIR takes measurements on individual soldier attitudes regarding relationships among soldiers and among soldiers and their leaders. These individual-level measurements are then aggregated by COHORT and nonCOHORT, and compared. Another strategy used was to aggregate soldiers by company and derive a "soldier will" score for each company. While measurements from individuals have been relied upon to assess interpersonal processes, it is

highly unlikely WRAIR will change this method of data collection, largely because of the personnel required to assess the nature of relationships between soldiers, such as social networking or the like. Furthermore, several important issues remain: Do aggregated measurements of individual soldiers actually reflect interpersonal processes? A related issue involves the level of analysis. For example, when aggregating measurements taken on soldiers, what is the appropriate level to aggregate? Squad? Platoon? Company? Battalion? The fundamental question here is: At what organizational level is the variance in "soldier will" best accounted for? An earlier attempt to answer this question indicated no relationship between the unit level and the amount of explained variance in cohesion (Sterling & Williams, 1982). WRAIR (employing a variance-components model of analysis) is currently attempting to address this question.

Another concern is the appropriate statistics to use in comparisons. Should we examine mean "soldier will" scores, variances, or both? Mean scores are highly susceptible to extreme scores, especially in companies in which few of its members have been surveyed. Because variances reflect the degree of agreement among soldiers in assigning numbers to the attitude statements, perhaps both means and variances for units should be closely examined. For example, two companies might very well have the same mean "soldier will." To conclude that both units have similar levels of cohesion without reference to their "soldier will" variances would be inappropriate. One company, having a lower variance than the other, shows that soldiers are in greater agreement about the unit's social climate than soldiers from another company with the same mean score, yet having a greater variance.

Another methodological concern in the field evaluation is the need to directly assess charging patterns of interpersonal relationships among soldiers and between soldiers and their leaders in COHORT and nonCOHORT units (see WRAIR's New Manning System Field Evaluation, Technical Report No. 1, Chapter 5, "The Measurement of 'Soldier Will"). Differences were noted between COHORT and nonCOHORT soldiers on the developed measures of cohesion. The inclination is to attribute these differences to differential patterns and quality of interpersonal relations among soldiers. However, as pointed out in the first technical report, it is necessary to directly assess whether these expected changes in interpersonal relations actually occur. Questions that remain unanswered for future research are: Who are soldiers' best buddies? What kind of support and help do these buddies give? How satisfying are these buddy relationships? Is there mutual caring and helping among soldiers? Do buddy relationships contribute to individual training performance? To unit training performance? To enhanced psychological well-being? Do buddies buffer the ill effects of stress and strain associated with military life? Finally, do COHORT and nonCOHORT soldiers give different answers to these questions? Providing answers to these questions is an immediate concern of future research at WRAIR.

Important mediators of "soldier will" that were recognized by WRAIR social scientists in the field, and by members of the WRAIR Research Oversight Panel are: leadership, command climate, and the degree of horizontal and vertical cohesion. The latter concepts have been initially explored and reported in this technical report. Future research efforts should be directed toward the identification of leadership styles and command climates that positively mediate the COHORT experience to achieve enhanced soldier will. Consideration should be given to studying critical links in the chain-of-command, particularly at those points where leaders are most vulnerable. It can be argued that personnel most likely to experience combat stress are those having to buffer their men from undue stress and strain coming from higher echelons, yet at the same time, this leader's career progression is largely dependent on complying with requests of more senior leaders.

Substantive Issues

Although differences between COHORT and nonCOHORT soldiers were found both at the individual soldier-level and company-level, a fundamental question remains unanswered: What do these differences mean in terms of substance? Stated differently, what do these "soldier will" differences mean in terms of behavioral outcomes, such as training performance or combat performance? To say that the developed cohesion scales represent a measure of combat readiness without a more direct reference to combat conditions is speculative. The need for behavioral outcome measures to effectively translate our "soldier will" measures is critical (see WRAIR's New Manning System Field Evaluation, Technical Report No. 2, "'Soldier Will:' Status Report").

Another bothersome question is: How generalizable are results obtained here? Even if COHORT units have greater "soldier will" because of their organizational structure, training, and deployment, can similar results be expected across time? What impact do political and historical events have on soldier will? For example, what role might the perceived legitimacy of war play in predicting a unit's readiness based on the "soldier will" measures? Most analysts of the Viet Nam War agree that soldiers' perceived legitimacy of the conflict was an important ingredient in the eventual outcome of this conflict. Gal (1984) addressed this when speculating differences in cohesion between soldiers involved in the 1973 Yom Kippur War and soldiers who invaded Lebanon in 1982. The fact that perceived legitimacy of the conflict was one of eight factors to emerge from a cohesion scale given to soldiers, and that this factor was moderately correlated with soldier confidence in leaders' decisions demonstrates the importance of this concept in affecting unit cohesiveness.

The last, and perhaps, most important issue of substance, is the need to couch the "soldier will" measures within a larger conceptual framework. Without such a framework, the cohesion measures can be viewed as either antecedents, processes, or consequences of cohesion. For example, teamwork

can be viewed as a necessary requisite for cohesion, but then how is cohesion operationally defined? What, then, are the effects of cohesion? A different set of questions emerge when teamwork is viewed as cohesion (process/throughput): What antecedent conditions are necessary to yield greater teamwork? What are the effects of teamwork (outcomes)? Finally, teamwork can be seen as an outcome measure in of itself. What, then, gives greater teamwork, both as throughput (process) and pre-existing conditions (antecedents)? What is evident from these mental gyrations is the need for a conceptual model that incorporates the antecedents, processes, and outcomes of cohesion. Without such a model, developed measures can be construed as antecendents/inputs, process/throughput, or consequences/output, leaving both the scientists, military leaders, and soldiers in a state of conceptual befuddlement. In a cooperative effort, ARI and WRAIR (E. Spence, Personal Communication; April, 1986) formulated a tentative conceptual model of cohesion, incorporating antecedent conditions, processes, and outcomes of cohesion in a causal framework. Figure 1 represents a simplistic version of this model.

What underscores the importance of the development of such a model are the adverse consequences of using cohesion measures as a means to evaluate effective unit functioning. A model that fails to describe the presumed chain-of-events invites evaluation apprehension, particularly for those held accountable for a unit's operation, namely unit commanders. A critical component in evaluating a unit's morale and cohesion is "treatment" prescription. The unit is diagnosed as ailing on morale and cohesion. What then is the "treatment?" What can make a more effective functional and combat-ready unit?

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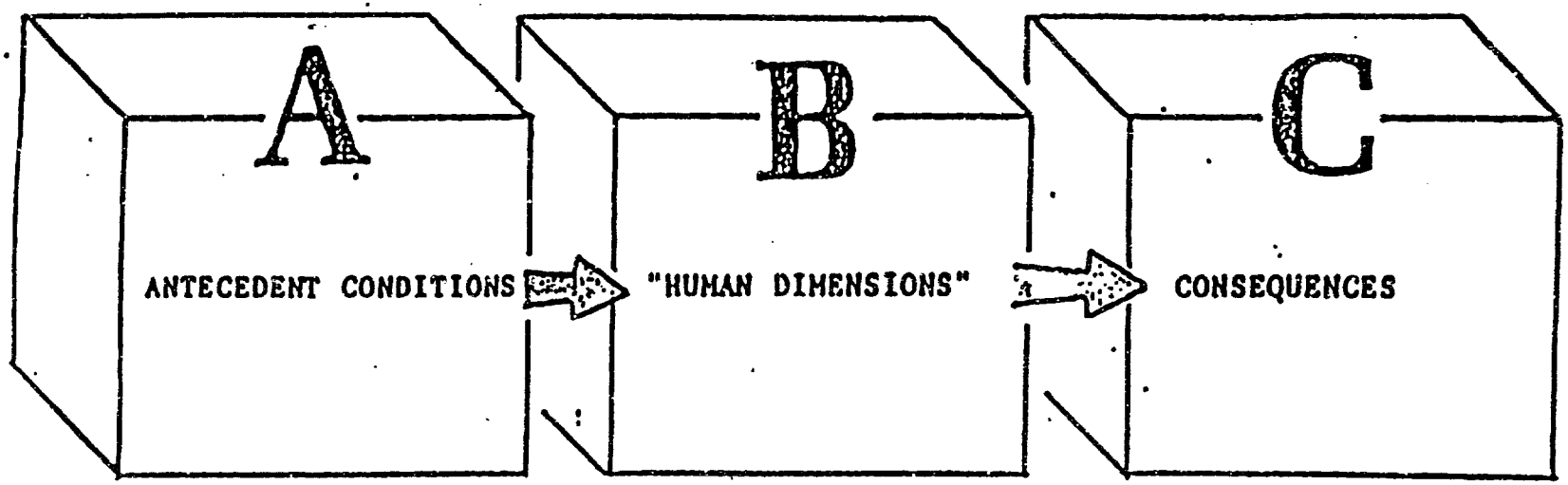
Figure 1. Preliminary Conceptual Framework for Studying the Effects of the New Manning System on Cohesion



RELEVANT QUESTIONS:

Personnel Replacement

What makes a unit COHORT?

What aspects of COHORT contribute most to changes on "soldier will" and performance?

What role do personal, unit, and community characteristics play in the intended effects of the COHORT process?

"Human Dimensions"

What are relevant human factors to study?

How are these human factors studied? Measured?

What do measurements on human factors mean in terms of combat readiness?

Behavioral Consequences

What are the best stand-in measures of actual combat performance?

At which level should measurements be taken? Individual? Group?

Table 1

Units in Analyses of First Iteration "Soldier Will" Questionnaire Survey

Battalions (N = 19)

Included Battalions (N = 16)

	1st Iter Admin Date	1st Iter Reached	Actual Admin	OCONUS Name	2nd Iter Admin Date	Actual Admin Date	3rd Iter Admin Date
Ft. Riley							
510 2-5 FA CHT	850501		850508	2-5	851101	851219	861001
630 3-6 FA non	850501		850509	—	851101	851216	861001
500 1-5 FA non	Will replace 3-6 nonCHT on 860115 for 3rd and subsequent iterations.						
Ft. Hood							
540 2-5 AR CHT	850601		850715	2-5	851219	860108	861001
640 2-8 AR non	850601		850508	—	851201	860109	861001
550 1-41 IN CHT	850501		850509	1-41	851101	851219	861001
650 2-41 IN non	850501		850510	—	860214	860218	861001
Ft. Bragg							
560 3-325 IN CHT	850601		850820	3-325	851201	851227	861001
660 1-325 IN non	850601	850823	850906	—	860321	860325	861001
Kirchgoens							
600 2-33 AR CHT	850601		850814	—	860301	860227	861001
670 2-32 AR non	850601	850916	850906	—	860301	860429	861001
Garlstedt							
610 3-41 IN CHT	850501		850724	—	860301	860128	861001
680 4-41 IN non	850501		851001	—	860301	860319	861001
Ft. Ord							
520 7-15 IN CHT	850501		850715	—	860101	860114	861001
530 3-9 IN CHT	850601		850729	—	860228	860303	861001
570 4-17 IN CHT	850701		850730	—	860228	860306	861001
580 5-21 IN CHT	850801	850903	850903	—	860301	860310	861001

Table 1 (continued)

Units in Analyses of First Iteration "Soldier Will" Questionnaire Survey

Independent Companies

Companies Deleted (N = 22)

	1st Iter Admin Date	1st Iter Resched	Actual Admin	OCONUS Name	2nd Iter Admin Date	Actuel Admin Date	3rd Iter Admin Date
Ft. Riley							
108 B/2-16 IN CHT	851028		851101*	A/4-16	860415	860401	861001
110 A/2-16 IN CHT	851125		860117*	---	860501	860520	861101

*Second iteration questionnaires used for first iteration administration. Responses will be used for first iteration data.

Ft. Hood							
075 D/1-66 AR CHT	850701		850709	A/2-66	860101	860109	860701
105 D/1-66 AR CHT	851101		851121	---	860401	860403	861101
Ft. Carson							
085 D/1-8 IN CHT	850501	850915	851018	A/4-8	860301*	---	860501
090 D/2-8 IN CHT	850501	850915	851016	---	860211	860321	860601
109 D/1-12 IN CHT	851212		851226**	D/3-8	860401	860414	861101

*Probably no second iteration administration, as this unit rotates OCONUS 860218.

**Second iteration questionnaires used for first iteration administration. Responses will be used for first iteration data.

Goeppingen							
045 D/4-16 IN CHT	850501	850909	851112	D/2-16	860210	860212	Disestablishes,860224
123 B/4-16 IN non	850601	850907		---	---*	---	860501

*First and second iteration administration dates have long since passed; therefore, no first and second iterations will be given.

Baumholder							
060 A/2-68 AR CHT	850501	850820	850830	---	860313	860313	860601
062 C/6-29 FA CHT	850501	850906	851031	C/5-29	860219	860219	860601
000 C/2-29 FA non*	850501				851101	---	860501

*At the time of first and second iteration administration, WRAIR and TCATA had not received USAREUR clearance. Given clearance 860131.

Table 1 (continued)

Units in Analyses of First Iteration "Soldier Will" Questionnaire Survey

Independent Companies (N = 38)

Included (N = 16)

	1st Iter Admin Date	1st Iter Reached	Actual Admin	OCONUS Name	2nd Iter Admin Date	Actual Admin Date	3rd Iter Admin Date
Ft. Riley							
082 A/4-37 AR CHT	850601		850621	C/2-37	851201	860109	860601
084 D/2-16 IN CHT	850601		850610	A/4-16	851201	851227	860601
091 D/5-16 IN CHT	850601		850610	A/1-16	851201	851216	860601
092 A/1-5 FA CHT	850601		850605	---	851201	851213	861001*
116 B/1-5 FA non	850601		850521	---	851201	851204	861001*
*NMS Line No. 092 is now No. 502. No. 116 is now No. 503 and part of 1-5 FA at Ft. Riley.							
Ft. Hood							
117 C/1-5 IN non	850701		850719	---	860101	860114	860701
120 B/1-67 AR non	850701		850726	---	860101	860109	860701
Ft. Carson							
080 D/1-10 IN CHT	850501		850823	---	860201	860204	860601
101 B/4-68 AR CHT	850501		850528	D/2-68	851101*	---	860501
103 A/3-68 AR CHT	850801		850807	B/1-68	860301	860303	860801
126 A/2-34 AR non	850501		850530	---	851101*	---	860501
*Second iteration administration dates have long since passed; therefore, no second iteration will be given.							
Carlstedt							
032 A/2-66 AR CHT	850501		850808	---	Disestablished, 851005		
033 B/4-3 FA CHT	850501		850808		Disestablished, 851005		
044 A/4-41 IN CHT*	850501		850924	---	Disestablished, 860223		
*A/4-41 IN nonCHT (NMS Line No. 682) replaces NMS Unit No. 044 effective 860223.							
128 B/2-66 AR non	850501	850819	850821	---	860201	860207	860601
Baumholder							
028 B/2-29 FA CHT.	850501		850517		Disestablished, 850720		

Table 1 (continued)

Units in Analyses of First Iteration "Soldier Will" Questionnaire Survey

Battalions

Excluded Battalions (N = 3)

	1st Iter Admin Date	1st Iter Resched	Actual Admin	OCONUS Name	2nd Iter Admin Date	Actual Admin Date	3rd Iter Admin Date
Vincenza							
620 4-325-IN CHT	850601	851201		---	860201*	860131	861001

*Never received first iteration questionnaires. Second iteration was administered ASAP.

Neu Ulm							
590 4-5 FA CHT	850501	850915	851206*	4-5	1st replaces 2nd iter*	---	861001

*Second iteration questionnaires used for first iteration administration. Because the rescheduled first iteration date was so close to the second iteration administration date, first iteration responses will be used for second iteration questionnaire responses.

Baumholder							
690 4-29 FA non	850501	851031*		---	860219**		861001

*First iteration administration dates have long since passed; therefore, no first iteration will be given.
**Second iteration administration dates have long since passed; therefore, no second iteration will be given.

[1]Third iteration dates for all rotating battalions and matched comparison battalions have been changed to 861001 to allow unit turbulence associated with battalion rotation to subside prior to data collection.

Table 1 (continued)

Units in Analyses of First Iteration "Soldier Will" Questionnaire Survey

Independent Companies

Companies Deleted (continued)

	1st Iter Admin Date	1st Iter Reached	Actual Admin	OCONUS Name	2nd Iter Admin Date	Actual Admin Date	3rd Iter Admin Date
Boeblingen							
043 C/2-37 AR CHT	850501	850905	851031	A/4-37	860202	—	Disestablishes, 860224
047 A/1-16 IN CHT	850501	850905	850913	D/5-16	860205	860205	Disestablishes, 860224
124 C/1-16 IN non	850601	850908		—	860301*	—	860601
127 B/2-37 AR non	850601	850907		—	860301*	—	860601

*Because these second iteration administration dates are so close to the scheduled third iteration administration dates, no second iteration will be given.

000 B/1-16 IN non*	850501			—	851101	—	860601

*At the time of first and second iteration administration, WRAIR and TCATA had not received USAREUR clearance. Clearance given 860131.

Wildflecken							
026 D/1-68 AR CHT	850501			—	Disestablished, 850713.		
130 C/1-68 AR non	850601	850830	850830	—	860201	860212	860701
Garlstedt							
000 C/4-3 FA non*	850501				851101	—	860501

*At the time of first and second iteration administration, WRAIR and TCATA had not received USAREUR clearance. Clearance given 860131.

Sandhafen							
129 B/4-8 IN non	850601	850920	851031	—	860301	860304	860701
Gonsenheim							
131 C/2-87 LI non	850601	850909	851031	—	860301*		860701

*Second iteration administration rescheduled for 860522

Table 2

Response Rates for First-Termers, NCOs, and Officers within COHORT and NonCOHORT Units

Rank Category	Response Rates COHORT	nonCOHORT
First-Termers (E1-E4)	76.7% (1568/2043)	77.9% (1188/1525)
NCOs (E5-E9)	67.7% (550/812)	66.8% (607/909)
Officers	59.1% (97/164)	50.3% (77/153)

Note. This table represents the 42 companies included in the analysis that reported response rates. These rates are based on total number of soldiers assigned to a unit with two exceptions: one battalion used the average number assigned and another used the number of soldiers available for duty.

Table 3

Description of Units Comprising the Sample

Type of Unit	Battalions (n=16)		Independent Companies (n=15)		
	COHORT	nonCOHORT	COHORT	nonCOHORT	Totals
Infantry	32(N=3735)	16(N=1427)	3(N=286)	3(1=97)	52(N=5545)
Field Artillery	5(N=537)	5(N=537)	3(N=239)	1(N=92)	14(N=1405)
Armor	10(N=828)	10(N=721)	4(N=223)	3(N=147)	27(N=1919)
Totals	47(N=5100)	31(N=2685)	10(N=748)	5(N=336)	93(N=8869)

Note. The number of companies comprising the battalions in the survey is indicated in the table.

Table 4

Hierarchical (Soldier-Leader) Cohesion Scale Items

Item No.	Item.	M	SD	Corrected Item-Total Correlation
F8.	Outside normal company duties, soldiers in my company would do most anything for their officers.[a]	2.61	1.10	.51
F9.	Outside normal company duties, soldiers in my company would do most anything for their NCOs.	2.78	1.12	.51
F19.	I often have good ideas but my leaders never consider them.	2.97	1.02	.26
F23.	When I first arrived, leaders helped me a lot to get settled.	3.21	1.24	.44
F11.	The officers in this company don't spend enough time with troops.	2.72	1.09	.28
F14.	The NCOs in this company don't spend enough time with troops.	3.24	1.04	.29
F17.	I would go for help with a personal problem to people in the company chain-of-command.	2.64	1.25	.50
F26.	My superiors make a real attempt to treat me as a person.	2.81	1.22	.63
S6.	My squad leader is often included in after-duty activities of other squad members.	2.66	1.06	.34

Table 4 (continued)

Hierarchical (Soldier-Leader) Cohesion Scale Items

Item No.	Item	M	SD	Corrected Item-Total Correlation
S11.	My platoon sergeant talks to me personally outside normal duties.	2.80	1.23	.51
S12.	My platoon leader talks to me personally outside normal duties.	2.66	1.19	.55
S13.	My company commander talks to me personally outside normal duties.	2.23	1.06	.51
S14.	My officers are interested in my personal welfare.	2.73	1.13	.66
S15.	My NCOs are interested in my personal welfare.	3.03	1.14	.69
S16.	My officers are interested in what I think and how I feel about things.	2.65	1.10	.69
S17.	My NCOs are interested in what I think and how I feel about things.	2.87	1.14	.69
U18.	How are relationships between officers and the enlisted in your unit?[b]	3.30	1.01	.53

Note. Respondent pool was E4s and below, N = 5358. Cronbach alpha = .88.
[a]Response categories to all items except U18 ranged from "strongly disagree" (1) through "cannot say" (3) to "strongly agree" (5).
[b]Response categories to this item ranged from "very bad" (1) through "so-so" to "very good" (5).

Table 5

Peer (Soldier-Soldier) Cohesion Scale Items

Item No.	Item	M	SD	Corrected Item-Total Correlation
P9.	I spend my after-duty hours with people in this company.[a]	3.25	1.22	.56
P10.	My closest friendships are with the people I work with.	3.12	1.27	.52
S3.	I spent a lot of time with members of my squad after duty hours.	2.97	1.25	.63
S4.	I spent a lot of time with members of my platoon after duty hours.	3.09	1.24	.67
S7.	I can go to most people in my platoon for help when I have a personal problem, like being in debt.	2.98	1.13	.56
S9.	Most people in my squad would lend me money in an emergency.	3.45	1.05	.60
S10.	Most people in my platoon would lend me money in an emergency.	3.31	1.04	.55
F5.	There is a lot of teamwork and corporation among soldiers in this company.	3.05	1.13	.36

Note. Respondent pool was E4s and below, N = 5532. Cronbach's alpha = .83.
[a]Response categories ranged from "strongly disagree" (1) through "cannot say" (3) to "strongly agree" (5).

Table 6

Factor Loadings for Hierarchical (Soldier-Leader) Cohesion Scale Items

Item No.	Item	Factor 1 Caring	Factor 2 Officer Involvemt	Factor 3 NCO Involvemt	Factor 4 Officer/NCO Involvemt
Percent Variance Accounted For:		35.3%	7.5%	6.9%	6.7%
F8.	Outside normal company duties, soldiers in my company would do most anything for their officers.	.74			
F9.	Outside normal company duties, soldiers in my company would do most anything for their NCOs.	.76			
F19.	I often have good ideas but my leaders never consider them.				.58
F23.	When I first arrived, leaders helped me a lot to get settled.	.48			
P11.	The officers in this company don't spend enough time with troops.		.46		.63
P14.	The NCOs in this company don't spend enough time with troops.				.72
P17.	I would go for help with a personal problem to people in the company chain-of-command.	.49			
P26.	My superiors make a real attempt to treat me as a person.	.53			
S6.	My squad leader is often included in after-duty activities of other squad members.			.52	

Table 6 (continued)

Factor Loadings for Hierarchical (Soldier-Leader) Cohesion Scale Items

Item No.	Item	Factor 1 Caring	Factor 2 Officer Involvemt	Factor 3 NCO Involvemt	Factor 4 Office/NCO Involvemt
Percent Variance Accounted For:		35.3%	7.5%	6.9%	6.7%
S11.	My platoon sergeant talks to me personally outside normal duties.			.71	
S12.	My platoon leader talks to me personally outside normal duties.		.52	.61	
S13.	My company commander talks to me personally outside normal duties.		.69		
S14.	My officers are interested in my personal welfare.		.72		
S15.	My NCOs are interested in my personal welfare.	.45		.57	
S16.	My officers are interested in what I think and how I feel about things.		.67		
S17.	My NCOs are interested in what I think and how I feel about things.	.47		.57	
U18.	How are relationships between officers and the enlisted in your unit?	.48	.55		

Note. Respondent pool was E4s and below, N = 5358.

Table 7

Factor Loadings for Peer (Soldier-Soldier) Cohesion Scale Items

Item No.	Item	Factor 1 Involvement	Factor 2 Instrumental Support
Percent Variance Accounted For:		46.5%	15.4%
P9.	I spend my after-duty hours with people in this company.	.82	
P10.	My closest friendships are with the people I work with.	.74	
S3.	I spent a lot of time with members of my squad after duty hours.	.72	
S4.	I spent a lot of time with members of my platoon after duty hours.	.79	
S7.	I can go to most people in my platoon for help when I have a personal problem, like being in debt.		.73
S9.	Most people in my squad would lend me money in an emergency.		.88
S10.	Most people in my platoon would lend me money in an emergency.		.84
F5.	There is a lot of teamwork and corporation among soldiers in this company.		.44

Note. Respondent pool was E4s and below, N = 5532.

Table 8

Intercorrelations Among "Soldier Will" Scales, Peer and Hierarchical Cohesion, General Well-Being, Sense of Community, Army Satisfaction, Life Satisfaction, and Spouse Support

Variable	Intercorrelations[a]												
	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Hierarchical Cohesion[b]	51	39	69	94	63	72	70	64	42	65	26	31	40
2. Peer Cohesion[c]	100	21	52	48	44	83	47	44	29	39	19	22	32
3. Senior Cmd Confidence		100	47	35	43	35	38	53	27	42	27	27	26
4. Small Cmd Confidence			100	66	64	66	60	77	36	57	23	24	34
5. Concerned Leadership				100	59	68	59	59	40	61	24	29	39
6. Sense of Pride					100	63	64	72	52	66	34	29	38
7. Unit Social Climate						100	62	66	43	61	27	29	39
8. Unit Teamwork							100	65	37	53	27	28	32
9. Company Combat Confidence								100	44	61	32	29	38
10. General Well-Being									100	57	49	27	32
11. Army Satisfaction[d]										100	56	41	44
12. Life Satisfaction[d]											100	40	32
13. Sense of Community[e]												100	37
14. Spouse Support[e]													100

Note. In reporting correlation coefficients decimals were omitted. N ranged from 1858 to 5713 depending on respondent pool.

[a]All Correlations are significant at $p < .01$.

[b]Some scale items were identical to "Concerned Leadership" scale items.

[c]Some scale items were identical to "Unit Social Climate" scale items.

[d]Only married individuals responded to this scale.

[e]Only married individuals with spouses responded to this scale.

Table 9

Hierarchical and Peer Cohesion Scales: T-Tests of Mean Scores between COHORT and NonCOHORT Soldiers in Line Companies

	COHORT[a]			NonCOHORT			
	M	SD	N	M	SD	N	t
Hierarchical Cohesion	49.56	11.17	2437	44.37	10.73	1038	12.67**
Peer Cohesion	26.13	6.34	2525	23.40	6.08	1082	12.00**
r between Hierarchical Cohesion and Peer Cohesion	r = .49** n = 2370			r = .52** n = 1890			z -3.00**

Note. Listwise deletion was employed. Higher scores indicate more of the construct, for both hierarchical and peer cohesion.
[a]COHORT units included all COHORT units within Line Companies.
**p < .001, two-tailed.

Table 10

Hierarchical and Peer Cohesion Scales: T-Tests of Mean Scores between COHORT CONUS and NonCOHORT Soldiers in Line Companies

	COHORT*			NonCOHORT			
	M	SD	N	M	SD	N	t
Hierarchical Cohesion	49.89	11.22	1426	44.37	10.73	1038	12.27**
Peer Cohesion	25.99	6.08	1480	23.40	6.08	1082	10.65**
r between Hierarchical Cohesion and Peer Cohesion	r = .49** n = 1069			r = .49** n = 1098			z 0.00

Note. Listwise deletion was employed.
*COHORT CONUS units included all COHORT units deployed in the Continental U.S.
**p < .001, two-tailed.

Appendix B

"Soldier Will" Survey Data with a Focus on Social Climate[1]

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[1]Thanks are extended to Richard Oldakowski for his technical assistance and graphic production support.

A MICROANALYTIC APPROACH TO THE "SOLDIER WILL" SURVEY DATA WITH A FOCUS ON UNIT SOCIAL CLIMATE

(Vaitkus and Hoover)

Introduction

As is the case with most surveys of the New Manning System's scope and complexity, the volume of reportable data can quickly clog the analytical senses of even the most sophisticated consumer. While macro overviews of the data, such as we have presented to this point, are important so that one can draw unbiased conclusions, to the extent the reader remains more overwhelmed than informed, the potential utility of the data is harmed. In this section, therefore, we begin what is hoped will be a series of complementary microanalytic exercises, with a mind to answering straightforward questions of the data in easily interpretable ways.

One caveat that must be confronted at the outset has to do with the notion of statistical significance. We will be concentrating in the following pages largely on statistically significant mean differences, which merely indicate that the means are reliably different from one another at least 95 times out of 100, regardless of how small those differences may be. Our large sample size enables us to claim that many small differences found are not likely due to chance, but we cannot equate that kind of statistical significance with military importance. Although morale studies that go back to those carried out by the Army's Research Branch during World War II tell us that measures contained in our "soldier will" scales, for example, are related to lower psychiatric casualties in combat, we do not know what level of "soldier will" is necessary to achieve specified levels of combat readiness or performance. Nevertheless, if we can show that differences in "soldier will" follow predictable patterns, that these patterns repeat themselves in the data, and that such patterns are understandable in terms of an underlying theoretical argument, we are then in a position to draw powerful conclusions concerning the nature of "soldier will" and therefore to assign more confidence in its projected military importance. These assumptions lie at the very heart of all the analyses conducted herein.

Findings and Discussion

"Soldier Will" Scales in Contrast.

Before leaving the macro level of analysis, given all the time and energy spent on developing reliable and valid "soldier will" scales, we may ask what the scores on these scales mean in terms of the current state of soldier will in the Army. Thus far, we have attended mainly to explaining the variances of the scales individually, without directly learning whether the message of one scale regarding the overall level of "soldier will" is similar to another. To accomplish this, since the scales have different minimums, maximums, ranges,

and midpoints (having been constructed with different numbers of items), we convert the seven scales to a common metric (0-100) and plot their means simultaneously, as in Graph 1.

The numbers on this graph become less mysterious if we stop to think what the midpoint line, shown cutting horizontally across the bars at 50, represents. Because all the scales were built on questions containing an ordered set of five response choices, a grand mean of 50 on any one scale would mean that the responses to all the questionnaire items on that scale for all soldiers answering those questions averaged out to the "3" category, which was variably labeled "can't say," "so-so," or "moderate" depending on the item. Likewise, a grand mean of 25 on the converted scale indicates that the responses averaged out to the "2" category ("low," "bad," or "disagree"), so that 75 would be a "4" category average ("high," "good," or "agree"). Zero and one hundred are the obvious average designations for the "very..." and "strongly..." category choices, i.e. all "1"s or "5"s respectively. The zero to one hundred scale itself was selected solely for ease of presentation and is, of course, arbitrary. What is important to remember is that a mean scale score above 50 reveals an average positive assessment of soldier will in that dimension, under 50 an average negative assessment, with 50 itself interpreted as assessments averaging to neutral.

The seven grand means of the "soldier will" subscales are laid out on Graph 1 in order: Company Command Confidence (CCC), Senior Command Confidence (SCC), Small-Unit Command Confidence (UCC), Concerned Leadership (CL), Sense of Pride (SP), Unit Social Climate (USC) and Unit Teamwork (UT). Generally speaking, these results show that "soldier will," variously measured, is neither very high nor very low, with scale means fairly well clustered around the neutral point. The sole exception is Senior Command Confidence, where average responses are closer to high than neutral or moderate. Confidence in the tactical decisions of commanders from battalion level on up clearly evokes more positive responses on the whole than assessments of company level phenomena. Nevertheless, confidence in leadership, whether at the company level (CCC) or below (UCC) still averages out on the positive side, whereas the perceptions that these leaders are interested in what the soldiers themselves think and feel (CL) comes out on the negative side. Concerned leadership, in fact, has the lowest relative mean (43.2) of all seven subscales, an important finding given the high correlation (.94) of this scale with our more purposive measure of vertical integration (discussed in the survey overview), which was found to be related to perceived combat readiness.

The other scale mean that falls below the neutral line is that of Unit Social Climate, which taps the perceived cohesiveness of bonds within the company and correlates .83 with the horizontal integration scale (of the overview chapter). Unit Teamwork, perceptions of how well company members cooperate with one another, fares only slightly better, though its mean does register just over the neutral line. Finally, Sense of Pride, the most egocentric of the subscales, looks much like the confidence in command scales

in terms of its overall mean. We can conclude from this graph that while the "soldier will" subscales present a somewhat congruent picture of soldier perceptions, there are distinct and meaningful differences among them that deserve further attention.

It could be argued that it really is not proper to compare the means of the seven scales since not all the scales apply across all ranks. Notably, Small-Unit Command Confidence, Concerned Leadership, and Unit Social Climate included responses from the junior enlisted ranks (E1-E4) only. In Graph 2A, this situation is corrected by excluding the senior enlisted and the officer ranks from the other four scales. This has the general effect of lowering the grand means for these latter scales by a couple points, though only one point for Senior Command Confidence and nearly four points for Sense of Pride. Our earlier observations of the scales with respect to one another remain intact, with the additional note that Unit Teamwork falls beneath the neutral mean line. The lesson here is that the inclusion of the higher ranks on CCC, SCC, SP, and UT tends to inflate those means, especially for the scale focused on the soldier himself (SP), but not so much so that the relative ordering of all the scale means is appreciably disturbed.

We can further refine our knowledge of these subscale means by limiting our calculations to the E1-E4 ranks in line companies only and comparing COHORT soldiers with nonCOHORT soldiers (Graphs 2B and 2C respectively). We know already that COHORT soldiers score significantly higher than their nonCOHORT counterparts on all the "soldier will" subscales. However, the greatest relative differences (more than eight points) are found with Unit Teamwork, Unit Social Climate, Small-Unit Command Confidence, and Concerned Leadership, with the smallest difference on Senior Command Confidence (four points). Furthermore, COHORT soldiers score on the negative side of the mean scale on two of seven subscales by as much as 4.5 points, whereas nonCOHORT soldiers score beneath the neutral line on five of seven subscales by as much as 12.6 points, so that for Concerned Leadership among nonCOHORT soldiers the mean is actually closer to the low than the neutral category designation. We can state that COHORT has noteworthy effects across the range of "soldier will" measures but, with the exception of Small-Unit Command Confidence, which involves leadership confidence within the platoon and squad, the greatest differences tend to be located where all E1s through E4s score lowest, that is on Unit Teamwork, Unit Social Climate, and Concerned Leadership. COHORT alone, however, is obviously not enough to raise scale means above the neutral line for our factor analytic approximations of vertical and horizontal cohesion.

A Rationale for Understanding Unit Social Climate.

We could continue to refine the "soldier will" means still further by breaking the analysis down by other categories of interest, but the work soon

turns unwieldy since every step is multiplied by seven. While admitting that we are being selective in limiting the remainder of this exercise to examining Unit Social Climate, the choice of this scale is far from random. Unit Social Climate possesses high intuitive appeal with respect to the central classification of interest, i.e. COHORT versus nonCOHORT. It contains questions directly addressing trust, closeness, social support, and scope of interaction within the company, platoon, and squad. These kinds of items are precisely those one classically associates with the concept of group cohesion, which we have also called horizontal bonding or integration. The COHORT system, with its joint goals of stabilizing personnel and keeping soldiers together throughout training and into their first unit assignment, should logically be expected to have the greatest impact on just the kind of primary group perceptions elicited by the USC scale. In addition, the scale is analytically desirable due to its fairly normal distribution (which helps meet the assumptions of statistical inference). All told, it would seem incumbent upon us to understand the New Manning System with respect to Unit Social Climate before considering any of the other "soldier will" subscales.

We do not have the space here to develop a full-fledged theoretical framework in which to interpret the USC findings ahead. Therefore, our discussion must be viewed as a preliminary one that incorporates at least the following core ideas. It is useful to think of the soldier as an individual at the center of a set of simultaneous and contradictory social forces, some of which generally enhance the soldier's ability to identify with his unit, and others that diminish that ability. Borrowing from physics, we may label the forces that "pull" the soldier away from a group orientation or axis as centrifugal (center-fleeing), and those that "push" him toward such axis as centripetal (center-seeking). Centripetal social forces lead to group cohesion, intimacy, sacrifice of self, and a sense of belonging. Centrifugal social forces lead to individuality, self-reliance, social alienation, and a sense of being disconnected or isolated. Knowing the balance of these two kinds of forces at any one point in time should help us understand differences in responses to question sets purporting to measure horizontal cohesion, such as USC.

It is a social psychological fact of life that joining a bureaucratic institution of the Army's size, with its panoply of divisions, departments, agencies, and offices and their arsenals of impersonal forms and procedures is an inherently alienating experience. Most members of the Army will remain strangers to the new soldier, yet he will find that he is subject to many of their decisions and is treated by them most often in terms of his SSAN, rank, and objectively recorded performance, rather than his personal qualities. With respect to group cohesion, then, the Army is organizationally its own worst enemy or centrifugal force. Even the Army's advertising slogan, "Be all that you can be," where you is viewed only in the singular, theoretically works counter to a group axis.

If the soldier had to deal socially with the Army as a monolith, group

cohesion would be next to zero. Like other large organizations, however, the Army can mitigate, if not reverse, the alienating effects of the organization as a whole by establishing supportive small group structures. These smaller unit structures, then, act as the focus of group life and buffer the individual from the depersonalization of the total structure, while at the same time meaningfully integrating him into the whole. The question of how successful the Army is at fostering such group development motivates our study of Unit Social Climate.

Results of a Group Mean Analysis of Unit Social Climate.

The development of supportive group structures, and the horizontal cohesion hypothesized to result from them, are not facilitated by rank, at least at the E1-E4 level. Graph 3 clearly shows that with each increase in grade from E1 to E4, the perception of cohesion within a unit drops. The scale for this and subsequent graphs is that of the USC scale itself, which runs from 15 to 75, with the neutral midpoint line running across at 45, and scores of 30 and 60 representing averages to the "2" and "4" categories respectively vis-a-vis the instrument. Only the E1s on the average, therefore, report positive levels of cohesion on USC. The negative slide is most severe between E3 and E4 with only a statistically insignificant drop of a half-point between E2 and E3. Most of the E1s in our sample are COHORT soldiers, but the same pattern is seen for nonCOHORT soldiers, albeit at a lower starting point.

One way to explain the effect of rank is to say that it is a form of status or vertical differentiation and therefore a centrifugal social force that inhibits horizontal intimacy. Also, rank obviously is correlated with time in service and, particularly at the lower ranks, this means rapid exposure to the organization as a whole, a centrifugal and alienating process that may negatively alter early expectations of a tightly-knit unit developed in training. In fact, even within the E1 group a decline is noted in USC by time in the unit on a month-to-month basis. Although rank theoretically offers a group of built-in social partners, it chiefly serves a bureaucratic and individual career function, as opposed to increasing bonding within the unit.

Another variable of theoretical interest for its impact on USC, also shown on Graph 3, is OCONUS assignment. There is a small but significant difference here, with CONUS (CON) soldiers reporting less negative responses on USC than OCONUS (OCON) soldiers. An OCONUS assignment involves the turmoil of reestablishing oneself in a foreign country far away from at least some social ties important to the soldier. More importantly perhaps, it introduces to the soldier a whole new Army world. In many respects, the soldier is likely to view the USAREUR as a different Army than the one back home, even if he has spent time on more than one CONUS post. The centrifugal impact on a cohesion measure like USC is therefore predictable.

With Graph 4 we arrive at unit structure per se. While the USC means fall below the neutral line for all battalion and company types, the light infantry (LGHT), airborne (AIR), and armored (ARM) battalions certainly score less negatively on cohesion than field artillery (ARTY) units, with the mechanized infantry (MECH) about halfway between the two extremes. Two centripetal kinds of forces relating to group cohesion appear to be operating here. The first is the high profile or "elite" labeling associated with the light infantry and airborne battalions. To the extent that soldiers see themselves as special or have internalized their group function as one of unique or especially vital importance to the Army mission, they will have an additional and powerful source of group identity. Though it may be symbolic in nature, that identity, we would argue, should result in higher perceived cohesion. The argument is less strong for the light infantry battalions since there is a confounding overlap of the COHORT label for these units.

The second centripetal force relates to size of the effective work group. Quite simply, the smaller the size, the easier it is to maintain cohesive bonds between group members. This appears to be the case, for example, with the armored units, and to a lesser degree with the mechanized infantry. This principle carries over in Graph 4 where company types are compared. There is decreasing cohesion reported from combat support (CS) to line to HQ to combat service support (CSS) companies. With the HQ and CSS companies, the loss of perceived cohesion may have less to do with the literal size of the effective work group and more with the diffuseness of the leadership and task structures within these organizations. In any event, conclusions about CS and CSS companies must be drawn cautiously since data came from only a few companies with these functions.

In Graph 5, the mean difference on USC between COHORT (COH) and nonCOHORT (NCOH) soldiers is displayed. COHORT soldiers do not fall above the neutral line on perceived horizontal cohesion, but they are less negative on the average by 4.5 points. The centripetal benefit of COHORT for group cohesion can either be accounted for by the actual social bonds formed through the common training period that are carried over into the new unit, or by the application and subsequent internalization of the distinguishing COHORT label to groups of stabilized soldiers. The remainder of Graph 5 would suggest that both processes may be taking place, although with differing degrees of higher perceived cohesion as a result. Comparable data are available only for mechanized infantry and armored battalions, and here we see that being personnel-stabilized alone (NMNL) gives us a (+)4.4 point USC difference compared with nonCOHORT units, which is what we would expect for COHORT soldiers as a whole. If the armor and infantry soldiers had common OSUT-training (OSUT), however, their USC mean rises an additional 1.5 points, and rests more clearly above the neutral line. We may tentatively argue that as long as the COHORT label is available in a largely nonCOHORT Army, it can serve as a mechanism for expectations resulting in higher cohesion, even when applied under different circumstances. (This assumes, of course, that the

COHORT label continues to carry the symbolic meaning of group cohesion and support within the Army.) Nevertheless, COHORT soldiers who have received their basic and AIT training together with members of their first unit will most likely exhibit the highest levels of horizontal cohesion.

Graphs 6 and 7 serve simply to present USC means by rank, deployment status, battalion type, and COHORT vs. nonCOHORT status, but this time only for members of line companies in order to provide for more direct comparisons within combat units. The difference between OCONUS and CONUS soldiers is a little less, and that between COHORT and nonCOHORT soldiers a little greater (with the COHORT soldiers averaging out at neutrality), but the results are not practically distinguishable from those of the total dataset. The most noteworthy difference is the 2.4 point rise in perceived cohesion for the armored line company soldiers that puts this group over the neutral line, a result not observed for the other battalion types.

It makes sense at this juncture to put our one-way variable results together into a higher order scheme so that the additive effects of the individual variables can be considered. To this end, Table 1 rank-orders Unit Social Climate means by a three-way line company classification based on battalion type, COHORT vs. nonCOHORT status, and deployment status. Whereas in looking at the variables of interest separately, we could find a maximum difference of only about six points, in putting these several variables together we discover a thirteen point difference from the group reporting the highest level of horizontal cohesion (armor-COHORT-CONUS) to the lowest (field artillery-nonCOHORT-CONUS). Noteworthy too is that the top group is well above the neutral value of 45 and the low group is well below. Based on these results, we would feel comfortable in saying the centrifugal and centripetal social forces discussed herein are generally additive, that is they contribute independently to perceived cohesion.

The patterns in these data are fairly consistent. The COHORT groups always report higher levels of USC than their nonCOHORT counterparts in similar units. Likewise OCONUS groups display lower USC than their CONUS counterparts in similar units except for mechanized infantry nonCOHORT soldiers, where there is no significant difference. The effect of deployment is especially severe for armor units. In general, armor, airborne, and light infantry units turn up with higher cohesion scores than mechanized infantry or field artillery units, except for the light infantry with respect to the mechanized infantry. Obviously we could make a stronger argument for the ordered effects of the three variables on USC if we had a more balanced design. The absence of any light infantry nonCOHORT or OCONUS units, of airborne OCONUS units, and of field artillery nonCOHORT OCONUS units precludes making conclusions of a definitive sort, and certainly puts a crimp in the multivariate statistical modelling of these data. On the other hand, the data that are available follow intelligible and predictable patterns and, therefore, lend preliminary credence to the theoretical notions advanced therewith.

The results of Table 1 are put into visual perspective in Graphs 8A and 8B. The numbers have been rearranged to show effects within battalion type and we note for armored units most clearly the predicted pattern of increasing group cohesion from nonCOHORT OCONUS (NO) to nonCOHORT CONUS (NC) to COHORT OCONUS (CO) to COHORT CONUS (CC). COHORT CONUS units appear to show the highest levels of perceived cohesion, although it is the COHORT label which has the strongest effect, followed closely by battalion type. Graph 8A compares mechanized infantry with the other general army units, i.e. armor and artillery, while Graph 8B re-presents the mechanized infantry groups with respect to the other infantry groups, i.e. light and airborne. Again, although the full predicted pattern is realized only for armored units, the full and partial results for the other battalion types lean heavily in the expected directions.

Relating the Findings Back to the Questionnaire.

Now that we have a good idea of how USC means can be ordered with respect to some of the more important variables of the New Manning System study, we may well ask how such results translate back to the actual questions answered by the soldiers in the survey. There are two questionnaire items that capture particularly well the literal meaning of the horizontal cohesion aspect of USC. The first item asks respondents to agree or disagree on the five point scale to this statement: "People in this company feel very close to each other." For those soldiers in armored COHORT CONUS units, 2% said they strongly disagree, 12% disagreed, 42% could not say, 38% agreed, and 6% strongly agreed. For field artillery nonCOHORT CONUS soldiers, however, 15% said they strongly disagree, 35% disagreed, 38% could not say, 10% agreed, and 2% strongly agreed. There is an obvious reluctance for soldiers to choose the extreme categories and a proclivity for piling up on the neutral category, a common problem with pencil and paper surveys of this nature, but that does not discount the meaningful 28% percentage difference between the two groups on the "agree" category.

Reviewing another questionnaire item will suffice in applying our most extreme group differences on USC. Respondents were asked to rate from very low to very high their "unit's togetherness or how 'tight' members of your unit are." One percent of armored COHORT CONUS soldiers said very low, 8% low, 38% moderate, 37% high, and 16% said very high. On the other hand, of field artillery nonCOHORT CONUS soldiers, 11% said very low, 26% low, 43% moderate, 17% high, and 3% very high. Thus, 20% of these artillery respondents would rate their unit's togetherness as high or very high, compared with 53% of the armored unit respondents.

Conclusions and Endnotes.

The Army faces a great handicap, due largely to its institutional structure, with respect to many measures that we have termed "soldier will." This is particularly true of the Concerned Leadership and Unit Social Climate scales, our two best available factor-analytically generated indicators of vertical and horizontal cohesion respectively. Theoretically, there are certain Army structures that either mitigate or exacerbate negative Unit Social Climate. The COHORT system, especially when that means common OSUT-training, is one such mitigator. Membership in army work units that are small in size or have clear leadership and limited organizational functions, such as in armored units and combat support units, is another. Specialized or "elite" status force inclusion, such as in airborne or light infantry units, becomes an additional way of increasing perceived cohesion. Deployment to USAREUR results in a small to moderate loss in Unit Social Climate, though it is particularly noticeable in armored units. The findings demonstrate that these effects are largely additive.

There are other variables, which operate on the individual level, that also affect horizontal bonding on USC. We considered rank as one such variable that is negatively correlated from E1 to E4 with USC. Further investigation is needed to better understand how perceptions of cohesion erode after entering a unit and again upon receiving the rank of corporal.

Other variables such as marital status, religious and voluntary group associations, and other affiliations also need to be examined with respect to their role as possible competing forces for unit group cohesion.

N.B. Statistically significant results reported here are based on multivariate analyses. (P values, coefficients, and Ns available on request.)

Table 11

Hierarchical and Peer Cohesion Scales: T-Tests of Mean Scores between COHORT OSUT Trained and NonCOHORT Soldiers in Line Companies

	COHORT[a]			NonCOHORT			
	M	SD	N	M	SD	N	t
Hierarchical Cohesion	50.20	11.15	1098	44.37	10.73	1038	12.67**
Peer Cohesion	25.92	6.12	1139	23.40	6.08	1082	12.00**
r between Hierarchical Cohesion and Peer Cohesion	r = .49** n = 1047			r = .49** n = 1890			z 0.00

Note. Listwise deletion was employed.
[a]COHORT OSUT trained units are units that have gone through Basic and Advanced Training together.
**p < .001, two-tailed.

Table 12

Multiple Regression Analysis in Which "Perception of Combat Readiness" Variables are Regressed on Peer and Hierarchical Cohesion Measures

Predictor	Criterion Variables: Company's Readiness[a]	Fellow Soldiers' Readiness[b]
NonCOHORT Units		
Peer Cohesion	012	036**
Hierarchical Cohesion	030*	027*
Interaction	000	000
	$F(3,1002) = 47.63$**	$F(3,1000) = 50.05$**
	R^2 Cumulative = 116	R^2 Cumulative = 131
COHORT Units		
Peer Cohesion	017	039**
Hierarchical Cohesion	025**	024**
Interaction	000	000
	$F(3,2362) = 103.56$**	$F(3,2345) = 100.50$**
	R^2 Cumulative = 116	R^2 Cumulative = 114
COHORT CONUS Units		
Peer Cohesion	035*	049**
Hierarchical Cohesion	036**	031**
Interaction	000	000
	$F(3,1063) = 46.17$**	$F(3,1054) = 46.08$**
	R^2 Cumulative = 115	R^2 Cumulative = 116

Note. In reporting standardized beta weights and R^2 decimals were omitted. As incremental R^2 are of less importance than the explained variance due to cohesion measures as a group, they were not reported.

[a]The respondent was asked, "How would you describe your Company's readiness for combat?" Response categories ranged from 1 ("very low") to 5 ("very high").

[b]The respondent was asked, "How would you describe you fellow soldiers' readiness to fight if and when it is necessary?" Response categories ranged from 1 ("very low") to 5 ("very high").

*$p < .05$.

**$p < .01$.

Table 13

Means on Selected Variables by OSUT-Trained, Personnel Stabilized, and NonCOHORT Categories

Variable	COHORT						NonCOHORT		
	Common OSUT-Trained[a]			Personnel[b] Stabilized					
	M	SD	N	M	SD	N	M	SD	N
Vertical Cohesion	49.70	11.20	1968	48.97	11.04	469	44.37	10.73	1038
Horizontal Cohesion	26.11	6.37	2037	26.22	6.19	488	23.40	6.08	1082
Comp Combat Conf	55.65	11.09	2957	56.39	11.24	740	52.24	11.64	1817
Sen Cmd Conf	18.01	4.42	2960	17.85	4.25	749	17.28	4.47	1790
Small-Unit Cmd Conf	38.23	7.77	2082	38.25	7.44	498	34.61	7.62	1101
Concerned Leadership	25.42	7.57	2108	25.21	7.31	506	22.45	7.35	1118
Sense of Pride	26.58	6.60	3061	27.37	6.06	771	25.04	6.53	1881
Unit Social Climate	44.83	10.32	2084	45.59	10.28	500	40.02	9.59	1106
Unit Teamwork	15.87	4.27	3064	15.68	4.19	772	14.07	4.33	1874
New N.C.O.s	1.96	0.93	3034	2.17	0.54	750	2.21	0.66	1844
New Officers	1.73	1.09	3033	2.22	1.17	747	1.90	0.88	1838
New Soldiers	2.17	1.16	3028	3.01	0.81	751	2.51	0.76	1841
Perceived Turnover	5.87	2.59	3005	7.42	1.86	744	6.63	1.78	1823
Common Basic Training	3.17	1.69	2168	1.71	0.99	705	1.49	0.89	1412
Common Advanced Training	3.16	1.69	2145	1.72	1.00	697	1.53	0.92	1410
Months in Unit	9.88	9.53	3046	10.99	11.18	770	14.44	11.77	1876

[a] Includes Light Cohort units, True Cohort units and one Airborne company.
[b] Includes Nominal Cohort units and three Airborne companies.

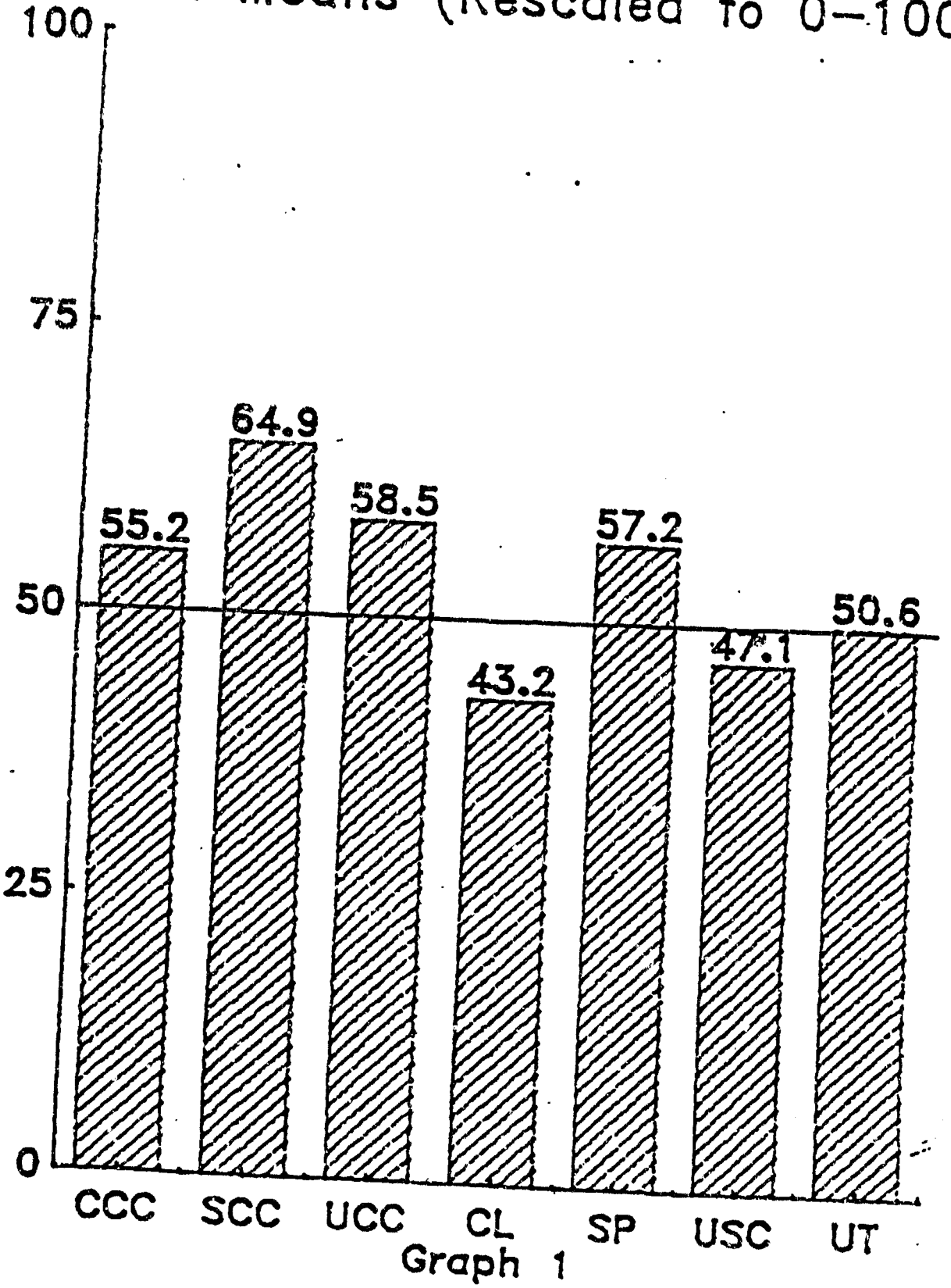
Table 14

Means on Selected Variables by OSUT-Trained, Personnel Stabilized, and NonCOHORT Categories Excluding Field Artillery Units, Light Infantry Units, and Airborne Units

Variable	COHORT						NonCOHORT[a]		
	Common OSUT-Trained[a]			Personnel[a] Stabilized					
	M	SD	N	M	SD	N	M	SD	N
Vertical Cohesion	51.87	10.83	762	48.85	11.42	328	44.71	10.77	763
Horizontal Cohesion	26.68	5.91	788	26.25	5.98	341	23.94	5.98	795
Comp Combat Conf	57.49	10.75	1193	54.93	11.30	541	52.36	11.70	1414
Sen Cmd Conf	18.45	4.19	1196	17.22	4.08	547	17.18	4.38	1393
Small-Unit Cmd Conf	39.52	7.21	812	37.72	7.60	349	34.61	7.53	804
Concerned Leadership	26.57	7.31	819	25.54	7.41	353	22.68	7.37	814
Sense of Pride	27.72	6.30	1223	27.06	6.07	563	25.17	6.52	1456
Unit Social Climate	46.60	9.68	804	45.09	10.29	350	40.66	9.49	810
Unit Teamwork	16.55	4.02	1225	15.54	4.29	564	14.13	4.29	1450
New N.C.O.s	1.97	0.88	1207	2.21	0.55	551	2.29	0.65	1432
New Officers	1.69	1.00	1204	2.33	1.28	548	1.91	0.91	1429
New Soldiers	2.42	1.27	1202	2.94	0.71	551	2.55	0.71	1432
Perceived-Turnover	6.28	2.56	1192	7.49	1.91	547	6.75	1.75	1420
Common Basic Training	3.02	1.65	805	1.44	0.61	512	1.44	0.89	1144
Common Advanced Training	3.01	1.65	799	1.45	0.64	507	1.47	0.85	1141
Months in Unit	10.38	10.15	1217	11.58	10.58	563	14.58	11.91	1452

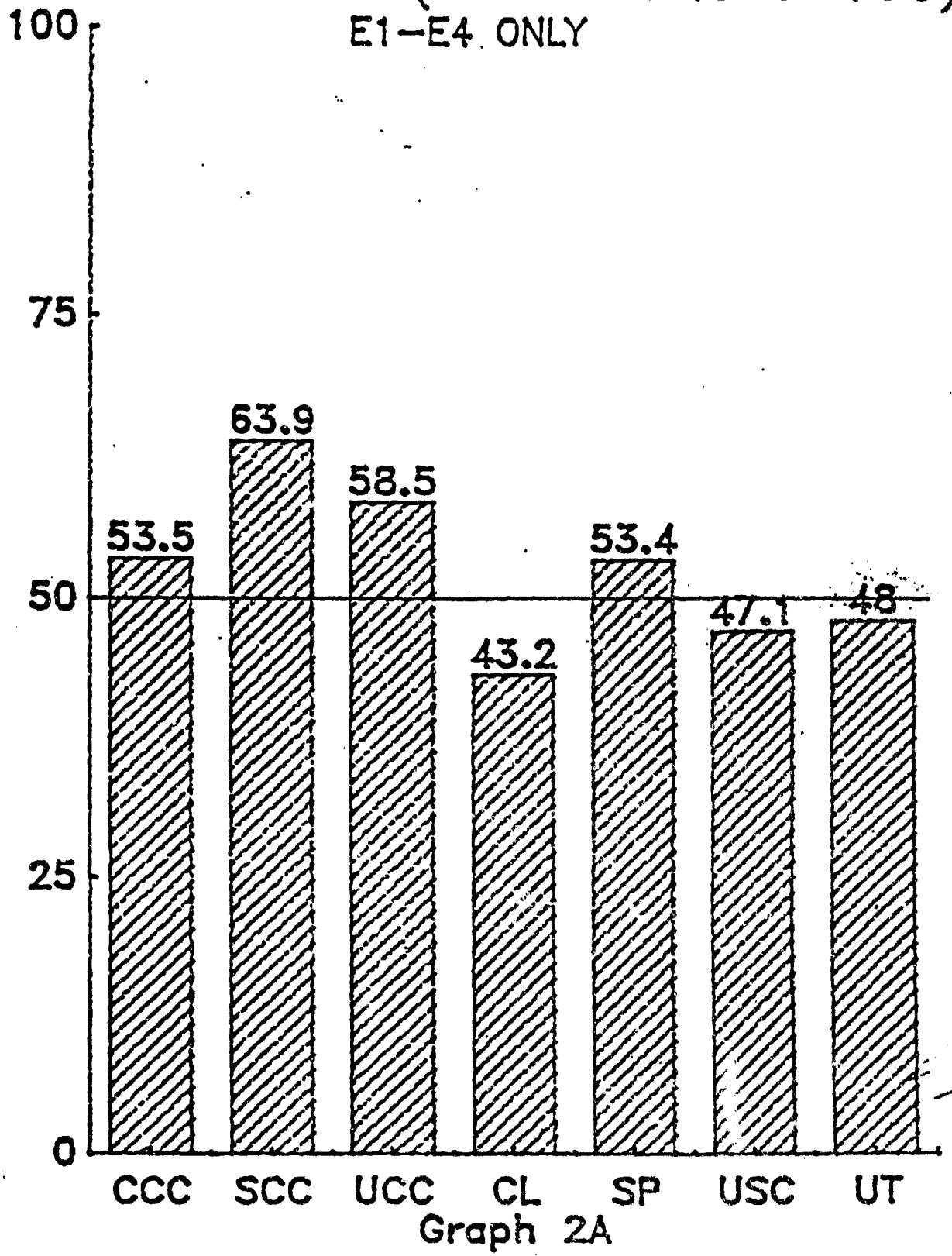
[a]Includes Mechanized Infantry and Armored Infantry units only.

Comparison of Soldier Will Subscale Grand Means (Rescaled to 0–100)



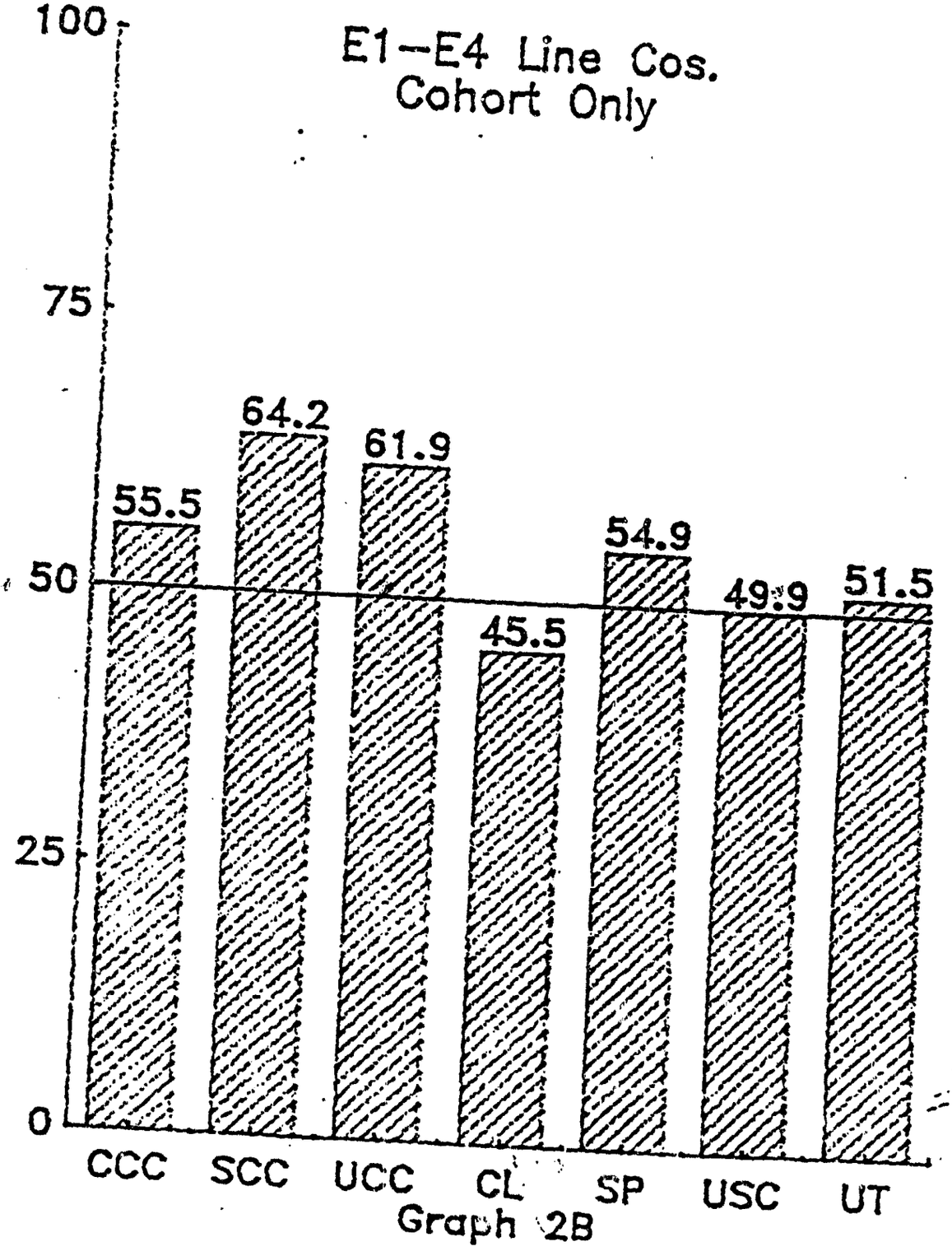
Graph 1

Comparison of Soldier Will Subscale Grand Means (Rescaled to 0–100)



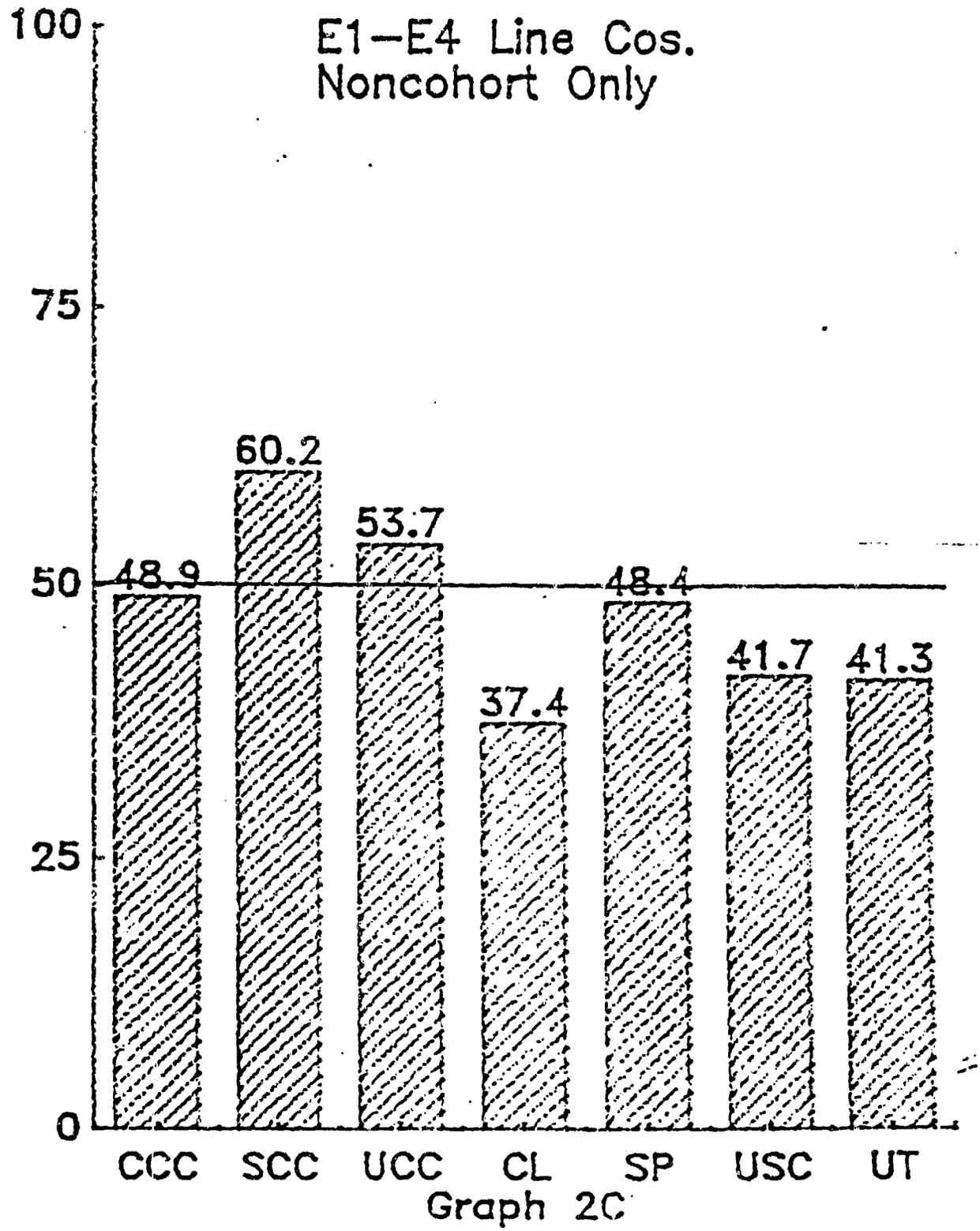
Graph 2A

Comparison of Soldier Will Subscale Grand Means (Rescaled to 0–100)



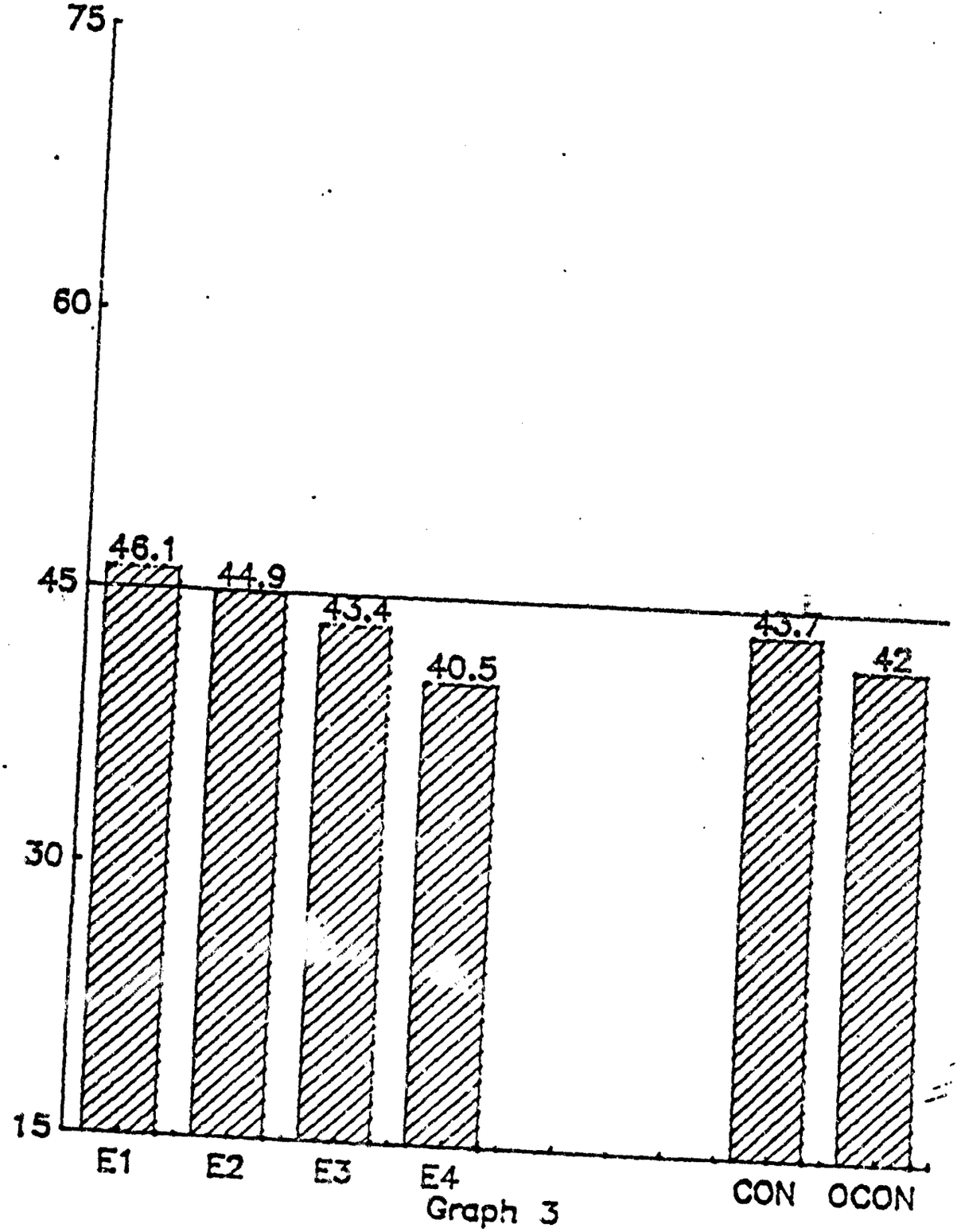
Graph 2B

Comparison of Soldier Will Subscale Grand Means (Rescaled to 0–100)



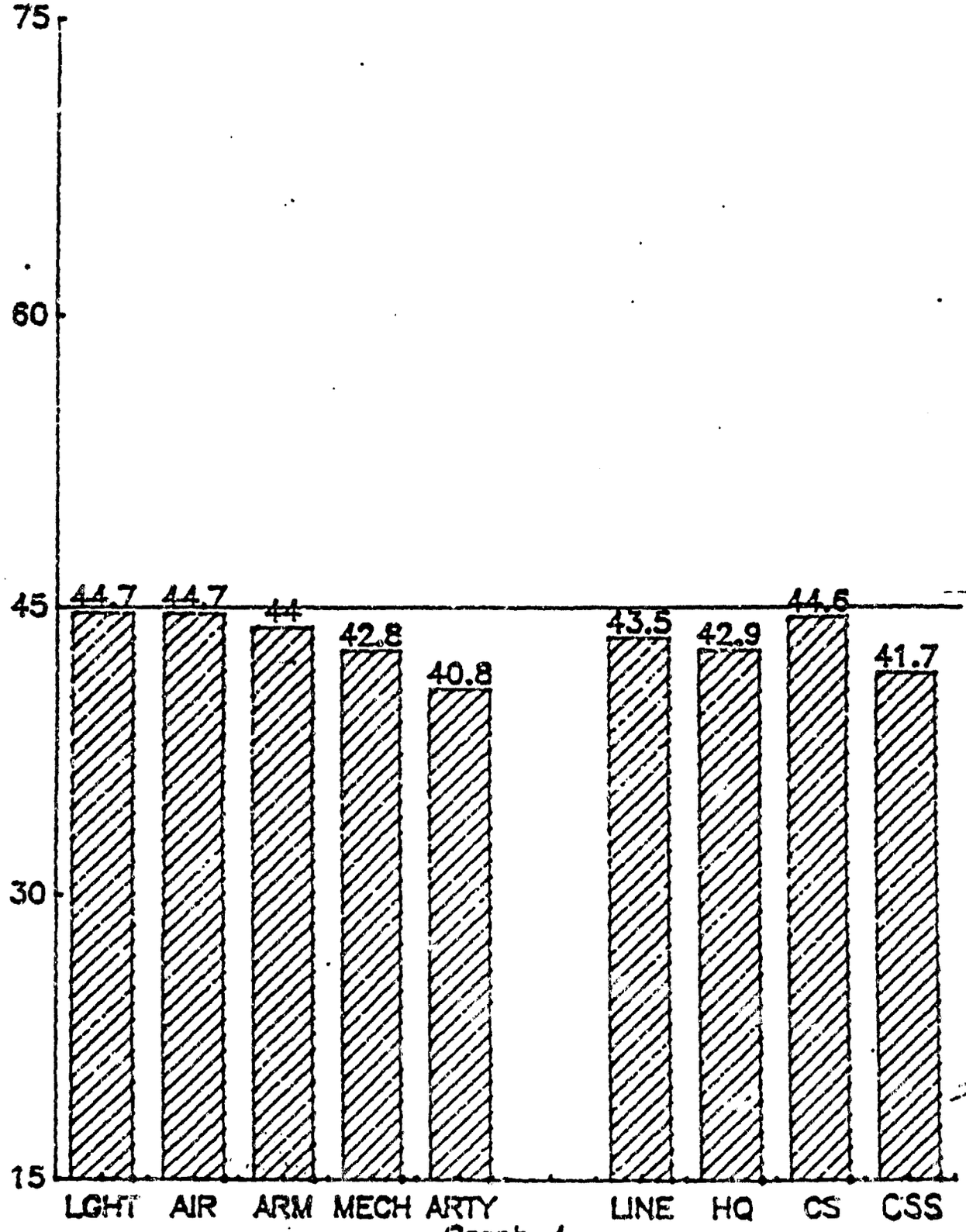
Graph 2C

UNIT SOCIAL CLIMATE MEANS BY RANK AND DEPLOYMENT STATUS



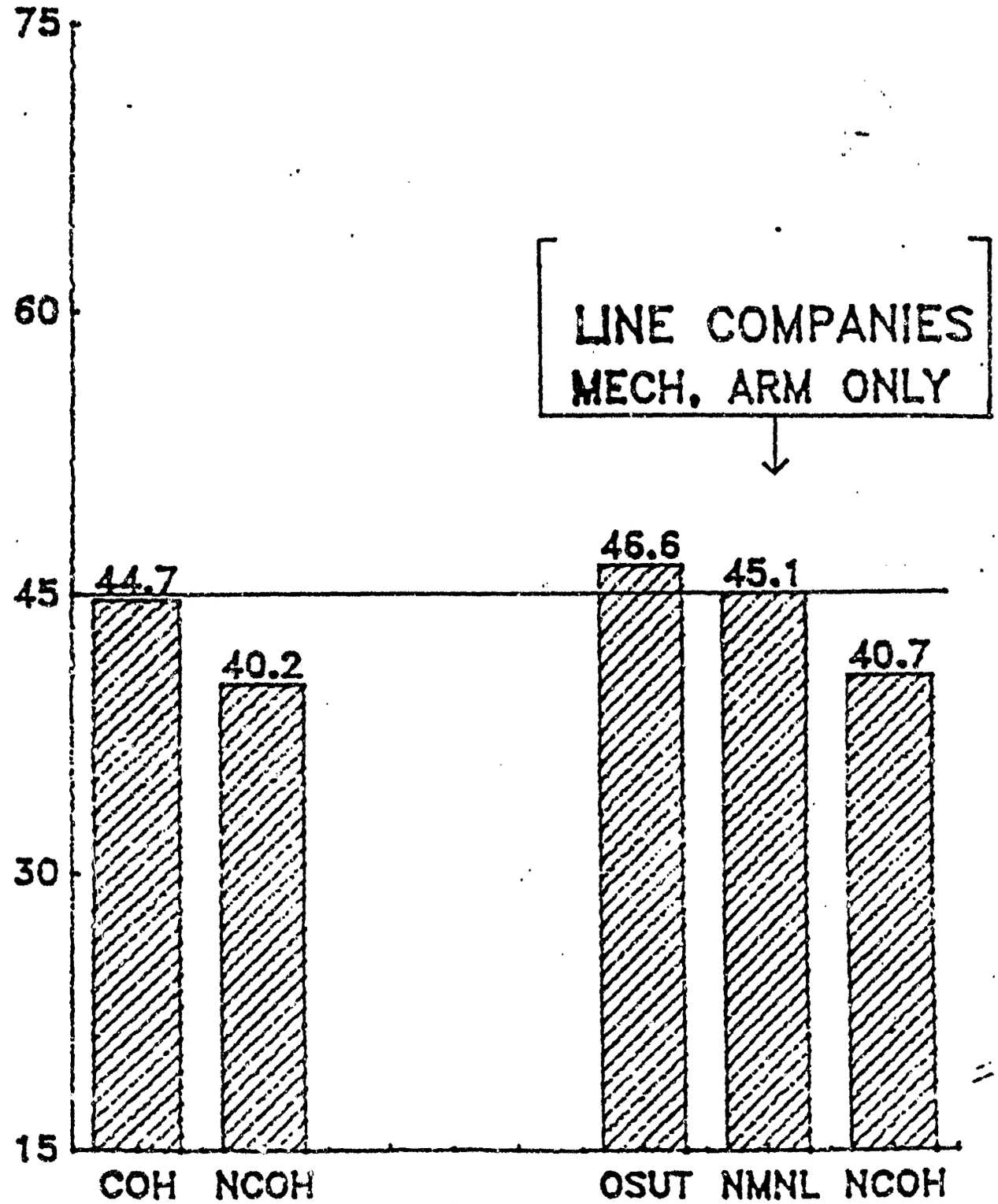
Graph 3

UNIT SOCIAL CLIMATE MEANS BY BATTALION AND COMPANY TYPE



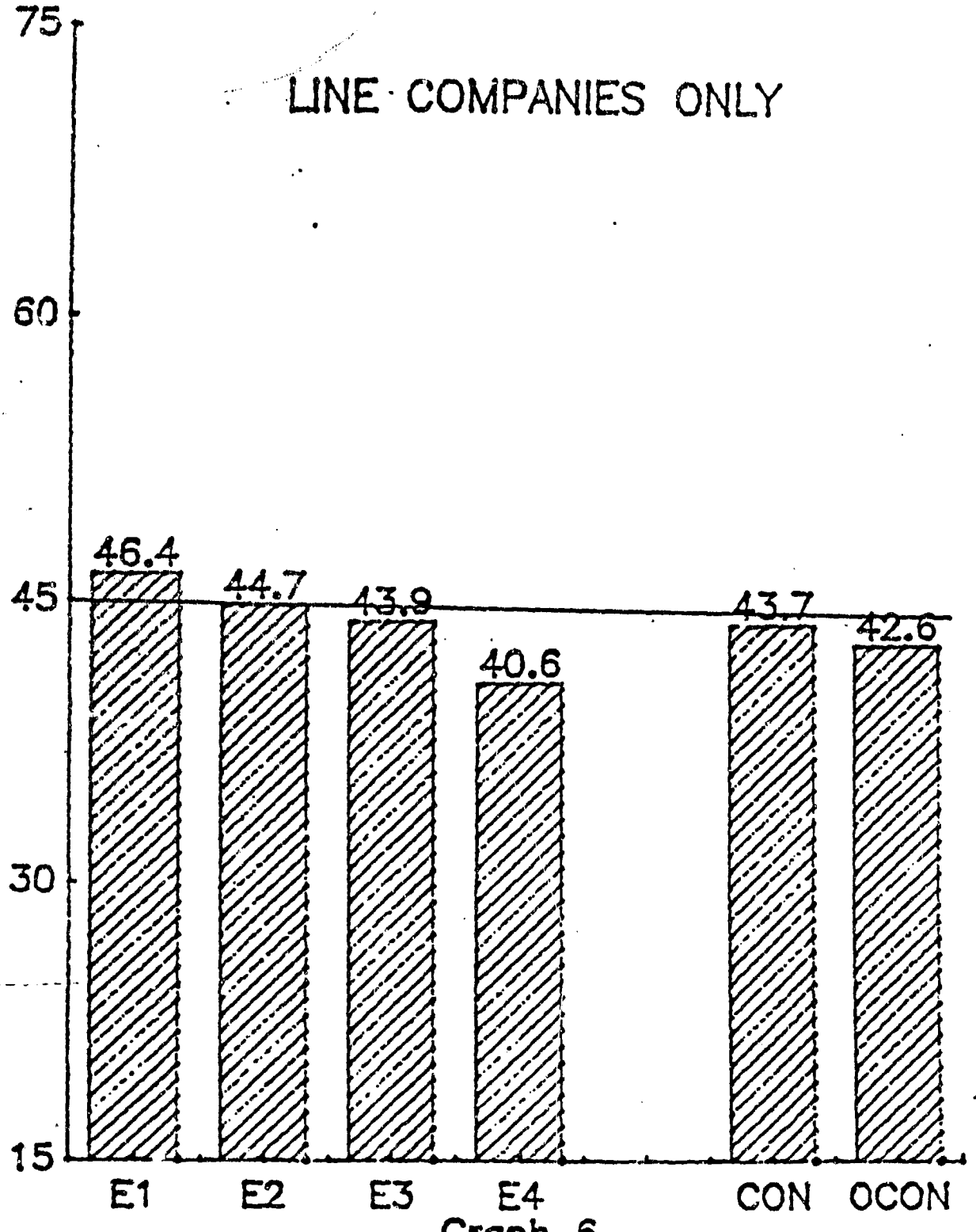
Graph 4

UNIT SOCIAL CLIMATE MEANS BY COHORT STATUS



Graph 5

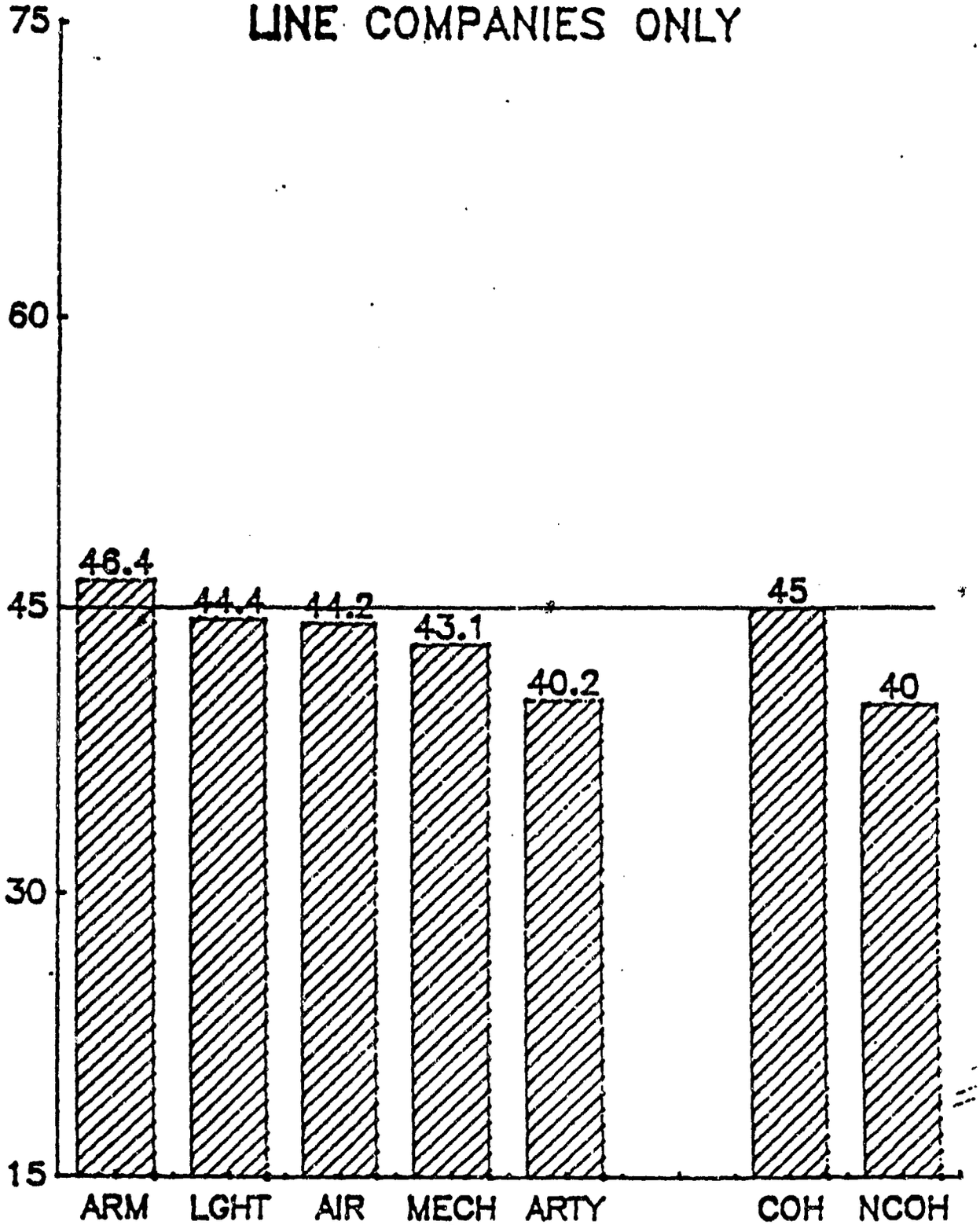
UNIT SOCIAL CLIMATE MEANS BY RANK AND DEPLOYMENT STATUS



Graph 6

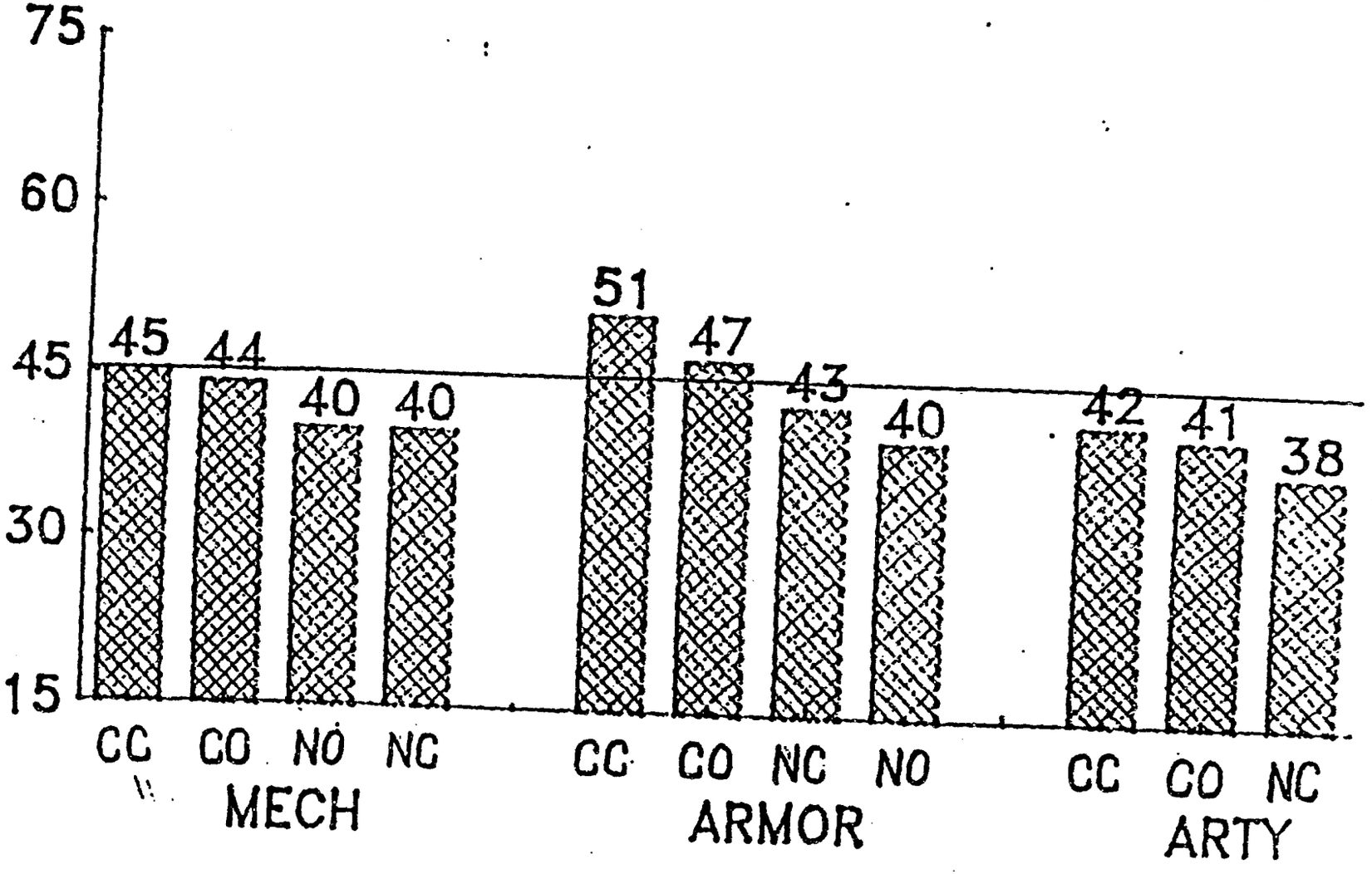
UNIT SOCIAL CLIMATE MEANS BY BATTALION TYPE AND COHORT STATUS

LINE COMPANIES ONLY



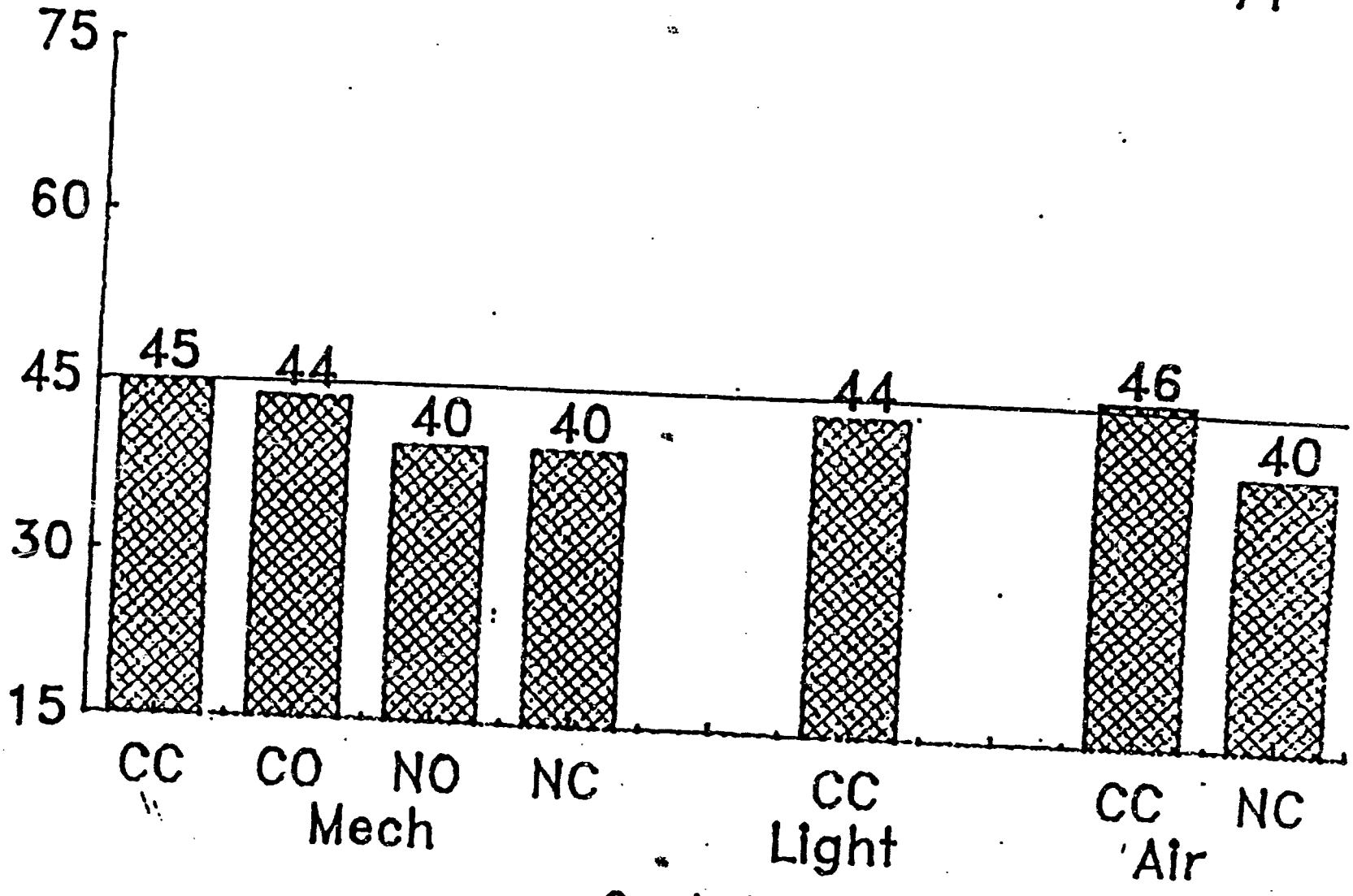
Graph 7

Unit Social Climate Means By Line Co. Classification Within Battalion Type



Graph 8A

Unit Social Climate Means By Line Co. Classification Within Inf. Bn. Type



Graph 8B

RANK ORDER OF UNIT SOCIAL CLIMATE MEANS BY (THREE-WAY) LINE COMPANY

ARMOR-COHORT-CONUS	51.2
ARMOR-COHORT-OCONUS	48.8
AIR -COHORT-CONUS	46.2
MECH -COHORT-CONUS	45.2
LIGHT-COHORT-CONUS	44.4
MECH -COHORT-OCONUS	44.0
ARMOR-NONCOH-CONUS	43.4
ARTY -COHORT-CONUS	42.2
ARTY -COHORT-OCONUS	40.9
AIR -NONCOH-CONUS	40.4
MECH -NONCOH-OCONUS	40.2
MECH -NONCOH-CONUS	40.1
ARMOR-NONCOH-OCONUS	40.0
ARTY -NONCOH-CONUS	38.2

Table 1.

Appendix C

Study of the Human Dimensions of The 7th Light Infantry Division (Family Issues)

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Adaptation Processes and Problems of Combat Arms Unit Family Members, 7th ID(L), Fort Ord, CA

(Joel M. Teitelbaum, Ph.D.)

Summary

Through the first year in the life cycle of 7th ID(L) COHORT combat arms units many enlisted families continue to experience adjustment problems while living in households on and around Fort Ord. Heavy field training demands and unpredictable garrison duty hours impact adversely on family life and conjugal cohesion. Newly established households often experience severe financial strain and high rates of residential mobility during the first year. In each new battalion a cluster of family members arrives with the cadre, followed by a smaller surge of families arriving with their first term COHORT husbands. However, many family members 'trickle in' during the following twelve months. About half the first term spouses are newlyweds. During the first year new wives and children of soldiers of all ranks add to resident households, while marital separations reduce family numbers. Well-organized unit communications to most family members by company and battalion Family Support Groups and pre-deployment briefings assist in providing essential information for family well-being. Unit leaders' wives are active in Family Support Groups. Active volunteers bond quite closely across ranks. However, enlisted spouse participation in Family Support Group efforts is minimal and their awareness of unit activities is imprecise. Rumor control is an important systems need. Many first term wives experience periods of intense psycho-social isolation. Some lack useful social coping skills. Few have close social bonds with spouses from their husbands' unit. Their key sources of inter-family social support tend to be through informally developed friendships based on neighborhood, child-care, employment, and other non-military affiliations.

Spousal participation in Family Support Groups is limited by socio-psychological factors such as husband and wife avoidance of inter-rank 'fraternization', and status and class differences between households. Unit spouses generally make individual adjustments without the benefit of sharing modes of family adaptation to the Light Infantry way of life. Major sources of information flow between unit and family that help alleviate family stress are welcoming activities, family briefings, FSG telephone trees and FSG-unit family newsletters and flyers, as well as word-of-mouth communication.

Problems of adaptation and family support occur throughout the Army and are not limited to family adaptation conditions in the 7th Infantry Division (Light) at Fort Ord. The findings presented here are based on interviews and observations from a small sample of unit households. The results are indicative rather than descriptive of overall family member forms of adaptation to the 7th ID(L) COHORT unit way of life.

Findings

A review of unit family rosters and a series of household interviews were performed with three dozen first term and junior NCO spouses and husbands in several COHORT unit companies, and with a few of their cadre during a period of 10 months in 1985-86. This data collection was not drawn from a random sample of households. It was selected to obtain information across echelons. The results show: 1) Wives (and husbands) express upset and resentment about frequent and lengthy absences from one another resulting from Light Infantry field training and deployment exercises over the past year. They anticipate continued heavy field duty demands. Spouses are uncertain about the timing of near term unit departures and length of training periods away from post. Garrison duty hours remain unpredictable for many soldiers and their wives. However, during recent periods of routine garrison duty many married enlisted soldiers (first term and NCO) have established a pattern of going home for breakfast or lunch with their wives on a daily basis. This practice appears to enhance conjugal cohesion, to alleviate uncertainty and to reduce rumors.

2) Families in households off-post are quite vulnerable to financial stress. Heavy indebtedness associated with household budgeting problems is a serious destabilizing factor for a large proportion of the younger first term families in this sample, especially those households with young children. Some of these families depend on Army food and loan services during recurrent financial crises. However, few spouses are aware of the range of Army and civilian services available to them to better cope with money problems.

3) In the first year at Fort Ord, the enlisted households sampled (E2-E6) averaged two residential moves within the local area. By the end of their first year an increasing number of these married enlisted soldiers had obtained on-post accommodation either in sub-standard housing or in the recently opened mobile home park on Fort Ord. Those residing in post housing are generally more satisfied than residents of the new mobile home area. The least satisfied are residents of off-post housing in crime-ridden neighborhoods, or those living in areas far away from other soldier families with problematic transportation.

4) A majority of new family members in the sample arrived at the beginning of the COHORT life cycle. However, many wives of recently married or geographically separated soldiers have 'trickled in' to set up households months after their husbands came to Fort Ord. The first group of families was welcomed by each unit, but some newly arrived family members are not routinely welcomed by the husband's unit or its Family Support Group as they arrive. Some new spouses are barely aware of the existence of the Family Support Group and have not yet become known to their husband's unit FSG.

5) Family Support Group telephone tree communications and newsletters are major information channels reaching most resident unit family members in this sample. Newsletters are not routinely mailed to geographically separated spouses. Family Support Group leaders try to update current addresses and

telephone numbers of enlisted soldiers' households every few months. But, some households in each unit are difficult to locate because of their high residential mobility. Several households in this sample do not have telephones at home.

6) Battalion and FSG leaders organize well-planned briefings for soldiers and spouses at pre-deployment meetings. There are high levels of attendance by spouses at battalion-wide briefings concerning upcoming field absences, especially deployment to overseas locations. Reasons for success in drawing attendance include: good publicity and advance notice to families by Unit and FSG leaders; spousal concerns about deployment timing, unit field activities and family information needs during absences; provision of compensatory time-off to married soldiers whose wives attend pre-deployment briefings; persuasion by unit and FSG leaders; provision of babysitting services by single soldiers during the meetings; opportunities for sociability (with refreshments) for new soldier families; attention to family member convenience in arranging pre-deployment briefing times. Unit and FSG leaders have developed innovative skills in drawing good attendance at these briefings.

7) Family Support Group volunteers are usually well-meaning wives of unit leaders at company and battalion level. Active participation by junior enlisted wives is minimal. First term and junior NCO spouses in this sample state that their own shyness, or their husbands' fears of 'fraternization', and a perception of rank-related domination by senior cadre wives are key reasons for avoiding Family Support Group meetings at the company level. Some express concern about increased organizational business, over-emphasis on rank differences, obligations to provide baked goods, and absence of relaxed group fun as detractors to FSG mutual social support. A widespread distinction has arisen between the active core of FSG caregivers ('WE') and the majority of enlisted family recipients ('THEY'). Interpersonal friendship and unit-based cohesion among active volunteers across ranks is often strong. But, among currently inactive enlisted spouses in this sample there is little evidence of a psychological sense of identification with Family Support Group or strong horizontal bonding with other unit wives. This contrasts with the close horizontal bonding observed among first term COHORT unit soldiers.

8) Many spouses of enlisted soldiers interviewed have grown accustomed to seeking personal assistance directly from their company or battalion commander's wife as a key form of Family Support Group help. This type of one-to-one assistance is assymetric and non-reciprocal in nature. Some enlisted wives become more dependent and do not develop better coping skills in this context. FSG-sponsored exchange of services and friendship between enlisted spouses within company units is strikingly infrequent. There is little evidence of non-formal mentoring of younger first term wives by more mature NCO wives in their husbands' unit. Some FSG volunteers express feelings of frustration about their unrequited efforts on behalf of unit families. Also, some cadre wives in the sample consider themselves to be

"obligatory volunteers" for unit FSGs, largely to help their husbands' careers.

9) Company Family Support Groups experience short cycles of intense activity in response to military events facing the unit during which increased efforts are expended by volunteer leaders. Reduced FSG functioning is associated with longer periods of garrison duty. The highest rate of FSG activity and interest shown by family members occurs shortly before and briefly after field training away from post. However, during absences of more than a week FSG volunteers respond to an increased volume of individual household problems from enlisted households. Some volunteers experience 'burn-out' from these caregiving efforts.

10) Based on information from our sample, many first term wives experience recurrent periods of intense psycho-social isolation stress during the first year of COHORT unit life cycle. Young husbands and wives are usually quite dependent on one another, but few spouses are closely connected to other wives of men in their husbands' units at the company level and below. They are especially vulnerable to rumors about unit mission dangers and fears about their own and their childrens' personal safety during the husband's absences. Most younger wives in the sample remain closely attached to their families of origin and their hometown ways of life. They phone home frequently, accumulating large monthly long-distance phone expenses. Non-payment of phone bills sometimes causes loss of phone service. Some wives and children make one or more visits home for periods of weeks or months. A few wives go home during pregnancy and return to Fort Ord only after the baby is born, or remain geographically separated. In the sample studied, friendship networks of most enlisted spouses have changed kaleidoscopically over several months during the first year of COHORT unit life cycle at Fort Ord. Most of these ties are loosely-knit. Churning and feelings of loneliness are often associated with high residential mobility, rapid turnover in arrival and departure of numerous enlisted households, and (especially) the strain of husband absences while on field assignment.

11) However, many spouses interviewed demonstrated their acquisition of informal friendship networks with wives of similar rank through common neighborhood location and shared daily life activities and needs. Spontaneous support networks among spouses and children develop through employment opportunities, babysitting and transportation arrangements with neighboring spouses, school, religious or ethnic affiliations and individual recreational interests. Although each spouse expressed concern about her husband's military duties, his unit demands and their effects on family well-being, unit Family Support Group activities do not appear to be major sources of cohesion or supportive bonding among most enlisted spouses. In contrast, a shared sense of identification with the husband's unit through its FSG is the basis for many friendships among spouses of senior cadre in the sample. Spousal bonds across ranks appear to be restricted by fears of

'fraternization', by segregated dwelling areas, by income, age and educational differentials, and by life-style distinctions.

12) During the first COHORT year some enlisted wives were unable to adjust to life stress in the Fort Ord area and have returned to their home communities. Some have traveled home more than once, and returned to their husbands. Marital separation is frequent. New marriages among COHORT soldiers are also frequent. There are significant levels of spousal distress and maladaptation among spouses in our sample. Most recently-arrived wives go through a trial-and-error adjustment process similar to that experienced by earlier arrivals. The majority do not appear to benefit significantly from mutual coping support by more settled wives in their husbands' unit. Nevertheless, many new wives receive a variety of information and assistance delivered by unit Family Support Group volunteers.

Implications

1) With the assistance of unit leaders, Family Support Group volunteers should create opportunites for horizontal bonding among spouses (and children) of COHORT soldiers. Intra-rank gatherings focused on common interests of newly arriving family members should be fostered. Symbolic rewards and activities to generate a sense of family-unit psychological community should be developed at the company FSG level as well as the battalion level. The sharing of experiences involved in the life transition of becoming an 'Army wife' would be a valuable theme, i.e. how to cope with moving to Fort Ord, finding housing, dealing with medical facilities and human services agencies at Fort Ord and in the Monterey area economy, finding support during pregnancy, childbirth, early childhood care and adjustments to intermittent husband absences. These and other household survival topics can provide discussion and mentoring opportunties for first term and junior NCO wives as well as cadre.

2) At the company level, FSGs should encourage the emergence of 'natural' leaders from junior enlisted as well as senior cadre ranks, as individual spouses demonstrate interest in building rapport among enlisted families. Elected representatives at each unit level should include wives of enlisted soldiers. Guidelines should not exclude them. Direct linkage of FSG leadership positions to the unit chain of command should be avoided. The taboo on 'fraternization' among wives across ranks should be explained as a relic of the past. Leadership in primary FSG groups at the company level and below should be shared in a situational manner, permitting number of individuals from all ranks to circulate in leadership roles over a period of months. Formation of 'We' and 'They' distinctions between volunteer activists and other family members should be discouraged. Ad-hoc consultation to help wives learn how to handle these roles should be sought through ACS and other auspices.

3) Training of all family members willing to participate in the Family Support Group functions should be performed via a workshop approach, teaching informal ways of handling and sharing group processes and skills in developing mutually supportive network relationships. Lessons learned on the limitations of FSG intervention on behalf of families as well as the benefits of volunteering for volunteers as well as recipients should be explained with many illustrative examples.

4) Within each battalion a human problems facilitator should be designated as the point of contact for Family Support matters. This could be the Command Sergeant Major or Rear Detachment Commander. Duties would include the role of unit gatekeeper for family needs and referrals and liaison with the Family Support Group. The battalion Chaplain should be encouraged to serve as a consultant to the facilitator and to unit Family Support Groups, without a specific role in the organization.

5) At the brigade level an ombudsman should be installed as a paid military or civilian staff member to act as family-unit officer and Family Support Group coordinator for each battalion and its companies. This individual should be selected by designating a trained, Army-wise, experienced individual available locally for a period of at least a few years, e.g., a professional Social Worker. At the division and installation level family-community concerns continue to be accorded the positive interest, caring and inter-agency & command coordination already observable at Fort Ord. However, multiple, new councils and management organizations at each unit level above the battalion should be minimized to prevent over-emphasis on super structure at the expense of primary group Family Support volunteer interaction. Welcoming of newly arriving family members and soldiers should be accomplished initially at the in-processing center by volunteers sponsored by Army Community Services and Family Support Group representatives in coordination with commanders and Family Support Groups at the unit level.

Appendix D

Summary of WRAIR Research Oversight Panel Dimension with LTG Robert M. Elton

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Summary of WRAIR Research Oversight Panel Discussion
with
LTG Robert M. Elton
28 March 1986

The panel made the following observations regarding policy and potential utility of the research findings to date:

1. The measurement of "soldier will" has now been attempted by a number of organizations using a variety of instruments. The scales available have internal validity and can be useful to commanders. The panel suggested developing a standardized instrument that could be used throughout the Army.

Discussion focused on how to insure it was used for diagnostic assessment and training improvement, rather than as measure of commanders' performance.

2. The panel emphasized that personnel stabilization undoubtedly created horizontal bonding, but that vertical bonding across ranks required increased conceptual attention. The panel also noted that stabilization and cohesion were not synonymous with readiness. None the less, turbulence data are presently not being collected within the personnel reporting system, and such information is as likely to be as important as equipment status.

Leadership deficiencies in non-turbulent units were noted in the discussion, as well. The key questions are what can we teach in Army schools? What are the relevant leadership behaviors? CSM Stock contended the central issue was the meaning of fraternization. COL Plummer argued that competency was the basic issue. Dr. Marlowe argued the fundamental difficulty was thinking about leadership in personality rather than in transactional terms. He suggested present leadership policies are personality dependent rather than normative within the institution.

3. With respect to families, the panel wondered whether the recent emphasis on married soldiers had not left single soldiers as second class citizens. COL Plummer cited the growing need to provide alternative recreational outlets for single soldiers who can no longer consume alcoholic beverages until age 21. Without alternatives, single soldiers are either driven off-post or into drug use as ways to structure their off-duty time.

4. The panel also wondered whether the recent emphasis on families might not have raised expectations which could not be realized because of resource constraints. For example, the data show commanders who are not skilled in organizing family support groups, but can they reasonably be expected to lead both voluntary and work organizations? Commanders need full-time family services officers or full complements of chaplains, neither of which are likely, given current end strengths.

Discussion centered on whether civilians might be employed as family services officers. Dr. Segal noted the Army tends to de-value personnel positions (especially civilian, but military as well), and that the skills needed for organizing voluntary groups were different from those needed to command. COL Plummer disagreed, and argued the problem was one of incorporating concern for families within the command ethic. Yes, but how? General Augerson cautioned against confining attention to immediate problems to the exclusion of the role of families in the event of deployment or evacuation. SGM Ryan warned of the problems of managing cohesive family groups within a military context, and wondered whether such family support groups might not create more difficulties than they solve.

The panel made the following points regarding methods and research issues.

1. The measurement of "soldier will" is valuable in itself, given the historical correlation between such indicators, combat performance, and psychiatric breakdown. The utility of the survey would be enhanced, however, were there correlations with readiness. The missing link is good measures of unit performance, and the best possibility for obtaining such measures is at the National Training Center. The panel recommended exploring the NTC data base in future work.

2. With respect to the presumed link between command climate and family stress, there are no convincing data; good ideas, yes, lots of talk, yes, but no data. Therefore, the presumed desirability of family support groups as mediators of stress requires documentation.

3. The research involving the 7th ID (L) is flawed by the absence of appropriate comparisons, and by the special efforts that have been made to insure success in the first light division, to include preferential personnel selection and high attention of senior Army Leaders.

4. COL Plummer expressed concern that the research reports too often seem a defensive of the COHORT concept. He reminded the panel that the object of COHORT is to create cohesion, and recommended a review of the original ARCOST recommendations in order to divorce cohesion, COHORT, and unit rotation issues.

5. General Ulmer warned that the benefits of COHORT were being purchased at the expense of the non-COHORT army. General Elton agreed that this was a key have/have-not issue that must be defused. None-the-less, General Ulmer insisted, "The bottom line ought to be a promise that we will never transfer soldiers as individuals; we must sensitize the Army that individual replacement is a disaster waiting to happen."

General Augerson raised the possibility of research into how to insert replacements into tightly bonded units. COL Plummer agreed, noting that we are not taking full advantage of opportunities to examine resilience and replacement strategies that will inform us on manpower replacement policy. General Elton suggested the possibility of controlled experiments at NTC.

The discussion again returned to the danger of confounding cohesion, stabilization, and replacement policy. It is necessary to be clear whether the evaluation is of one system or alternative replacement strategies, lest we conclude the present COHORT system must be abandoned because one replacement scheme was flawed.

Several commented that nobody in the Army disputes that keeping soldiers together as long as possible is ideal; the debate is on the cost. Must we rob the nonCOHORT army to build stabilized units?

COL Plummer commented on the sustainment problem. Sustainment is a small unit leader issue that must be addressed in the Army school system with the cooperation of DCSOPS. Dr. Marlowe noted there must first be a commitment to creating leaders. Schools can create movement and sustain expertise, if we begin teaching leadership.